

# **ISLAM AND THE ENVIRONMENT**

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## INTRODUCTION

The Environment has become a subject of interest in recent years. Before Darwin, the significance of the Environment was summed up in the word Creation. Since Darwin, Creation has become an obsolete word in scientific circles - few believe in a Creator. The debate now revolves around new questions:

- How much effect do human intentions have on the results of experiments?
- Some facts are unknowable by human beings because they are changed by the act of measuring them - what are the limits to human beings' capacity to find out? Could such facts be known by their 'Creator'?
- What are the ethical limits to scientific investigation and the application of scientific findings and technological skills? Who has the authority to set such limits?

The Qur'an encourages human beings to investigate to the limits of their capacity all the phenomena they see about them, to ask questions (like the ones above) and even to try to find fault (67:7). But it asserts that however hard they try, their investigations will end in exhaustion, without finding any fault, because the works of Allah are so much mightier than the human mind can comprehend. Humans cannot comprehend anything of His knowledge, unless He wills it (2:255).

Human beings have been honoured by Allah in many ways: He gave them knowledge of a kind not possessed even by the angels; and made them masters, if not of the whole earth, at least of those creatures and substances that are useful for them.

*We have honoured the sons of Adam; provided them with transport on land and sea; given them for sustenance things good and pure; and conferred on them special favours, above a great part of our creation*

(17:70)

The Qur'an invites people to think, contemplate and reflect upon the signs and wonders of Allah's creation: how He made the sun and moon a means for people to tell the time, how He made it possible for people to travel by sea, and derive food and transport from certain animals.

This is not 'conquest' of nature by human beings as some would like to think, but the subtle observation and use of the ways these things are made - the laws of Allah. What is science but a process of discovery of 'natural laws' so that they can be put to use in the service of mankind? If those 'natural laws' are changed, or different, or even just unpredictably disrupted in some way, human beings are no longer in control of nature, like the ship mentioned in the Qur'an which is tossed by a storm. The people on it only remember Allah when they do not feel in control of the situation, but as soon as they feel safe, they forget about Him again.

*He it is Who enableth you to traverse through land and sea; so that ye even board ships;- they sail with them with a favourable wind, and they rejoice thereat; then comes a stormy wind and the waves come to them from all sides, and they think they are being overwhelmed: they cry unto Allah, sincerely offering (their) duty unto Him saying, 'If thou dost deliver us from this, we shall truly show our gratitude!'*

(10:22-3)

Similarly, today we find that disruption in the environment is threatening our control of it and we are starting to worry, and appreciate the fine balance of 'nature' which we have taken for granted up to now.

Environmentalists point out the many destructive results of human science and its applications in the modern world. The Qur'an says:

*Mischief has appeared on land and sea because of what the hands of men have done, that (Allah) may give them a taste of some of their deeds, in order that they may turn back (from Evil).*

(30:41)

It also shows the right way to interact with the environment. As long as people respect Allah, and the way He has set His creation in order, He will help them:

*Do no mischief on the earth after it hath been set in order, but call on Him with fear and longing (in your hearts) for the Mercy of Allah is (always) near to those who do good.*

(7:56)

He set a measure for everything (65:03) and set up the Balance (15:19). So finely interlinked is this balance that the least action of the least creature can, in theory, make all the difference between, for example, fine weather and a storm. This is called, in chaos theory, the Butterfly Effect. How much more so then do the actions of human beings affect the state of the environment? With this in mind, the 'Balance' in the Qur'an refers not just to the 'ecological balance' we know today from science. Most often it means the Balance of Justice which weighs the deeds of human beings, the Balance of Right and Wrong. There is a right way to live and a wrong way. If people follow the instructions given by the Maker, then the balance is maintained, if they go against them, the balance is upset but, as Allah, the Creator, has power over all things, the balance He has created will be restored, at the expense of those who disturb it. It is on their own heads that the results fall.

The Qur'an does not condemn wealth and spending money, in fact it encourages it, so long as it is spent in a good way, the way of Allah. But it does say that wealth should not circulate among the rich and that it should be shared as a right with those not so well off. It encourages enterprise and development of natural resources, but also condemns excessive profit and usury that distort the market.

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The sayings of the Prophet (peace and blessings be upon him) bear out this attitude. The person with the best right to own land is the one who cultivates it and makes the desert green. Conversely, as the Qur'an says, the deeds of the unrighteous can be recognised by their destruction of the environment, whatever they may think and declare their intentions to be:

*When it is said to them 'Make not mischief on the earth,' they say, 'Why, we only wanted to make peace.'*  
(2:11)

The Qur'an condemns those who heap up wealth, believing it will make them live forever; those who appear to be pious, yet do not help orphans or feed the needy, and refuse to do even small good deeds. These are the people whose callous attitude to Allah's creation and His creatures make them unaware and heedless of the damage they are doing in their quest for wealth.

These are the men who cut down huge forests of majestic trees to provide hardwood for office furniture, window-frames, even paper, and pay no attention to restocking the forest; men who fish vast quantities from the sea, heedless of the fact that they are not allowing the ocean's life to replenish itself; men who oppress people and keep them poor, who force them from their lands, leaving them without any livelihood, and then employ them for low wages on their own land to grow crops for the market to make their employers rich; those who even kill and maim people in order to profit from the land they have stolen. These are the people who cause direct damage to the environment.

Profits should be moderate and fair. Cartels and monopolies, hoarding and any other method of artificially interfering in market prices are banned in Islamic law. The office of consumer protection and market supervision, the *muhtasib*, was instituted during the *khilafah* of Umar Ibn al-Khattab (d.644CE) to ensure that fair prices and quality control were maintained.

The means of making profit should be generally beneficial to the community. Any harmful trade, like drugs or alcohol, is forbidden. By analogy, trade in harmful chemicals, once proved to be so, should also be banned, as would tobacco and other harmful consumer products, like petrol containing lead, and CFCs which destroy the ozone layer.

No believer in Allah could, like the former US President George Bush, ridicule a person who earnestly strives to protect the environment and Allah's creatures, or argue that jobs come before protecting the environment. The environment IS jobs. No product, however small and insignificant, can be made without using natural

ingredients derived from the earth and its plants and animals. Food is not made in supermarkets, or even factories, it is grown in Allah's earth, nourished with His rain and harvested by workers He has created. The cars and lorries that transport it are built from iron dug up from the earth, and plastics made from oil which used once to be trees. Electricity is generated from heat made by burning coal, oil and gas from under the earth, and from uranium dug out of the earth. Pencils are made from trees, and computers from oil and metals dug out of the earth. The intelligence with which human beings devise means to use these resources is also a gift from Allah, Who first taught Adam the Names of Things (Q. 2:31), and subjected the earth and many of its creatures to the use of humanity.

### The Trust

Allah gave the responsibility to humanity as a *khalifah* - which basically means successor, but has also been translated variously as vicegerent, agent, steward - to care for His Creation. In the Qur'an this responsibility is called *al-amana* - the Trust, which was refused by the mountains and all of creation but taken on by humanity in their folly (33:72).

So each one of us has a responsibility to use what little power we have to make things better, not worse. We should try to live economically, grow some of our own food, use electricity and petrol sparingly, walk and cycle and use public transport where possible, and share whatever we have with others who are not so well off.

As recent corporate learning theory has confirmed, only when each person can see beyond their own individual needs to the effects they produce on the rest of the community, does the whole community begin to work properly and adapt to survive as a viable organism. Environmentalists agree that education and information are a vital way to improve the situation. *Insha' Allah* (Allah willing), this collection of essays will go some way towards helping people to see the wider picture.

### This Book

My main aim in making this book was to bring together as many Islamic writings on the Environment as I could find, and assemble

them in one volume which would help put Islam's valuable contribution on to the table in the international and multi-faith Environment debate. Conversely, it is meant to help Muslims to put care for the Environment among their religious priorities. The real Environment, as Nasr points out, is Allah Himself, and the Creation a reflection of His power and perfection. Islam is one of the few world religions still strong and vigorous enough to reinstate worldwide a vital, but almost vanished reverence for Creation.

The first part of the book consists of short, discursive essays and talks covering the whole range of Islamic thinking on the subject of the environment. The second contains longer and more in-depth studies of narrower topics.

The papers have been collected from magazines and books, some written specially for this book. This means that some writers have provided very detailed footnotes and reading lists, while others have not. Rather than attempting to achieve uniformity by removing all the notes and references, I have included them for those readers who are eager to pursue the subject further. Those who are not so keen may be happy to concentrate on the texts.

There is some repetition of concepts and Qur'anic verses as each writer explores the Islamic teachings on the environment. However, each brings a slightly different perspective to bear, and each repetition helps to reinforce the core ideas and clarify them further, so I have decided to leave them as they are.

I hope, *insha' Allah*, this book will scatter seeds from which many other studies and projects will grow, whether environmental projects started by Muslims or in collaboration with non-Muslims, discussions in study circles, or with non-Muslim environmentalists, planners, financiers and economists. Islam has a positive contribution to make, if only people can understand.

*Say: 'Not equal are things that are bad and things that are good, even though the abundance of the bad may dazzle thee; so fear God, O ye that understand; that (so) ye may prosper.'*

(5:10)

## PART ONE

### THE WIDER PICTURE

## THE MUSLIM DECLARATION ON NATURE

**Dr Abdullah Omar Naseef**

The essence of Islamic teaching is that the entire universe is Allah's creation. Allah makes the waters flow upon the earth, upholds the heavens, makes the rain fall and keeps the boundaries between day and night. The whole of the rich and wonderful universe belongs to Allah, its maker. It is Allah who created the plants and the animals in their pairs and gave them the means to multiply. Then Allah created mankind - a very special creation because mankind alone was created with reason and the power to think and even the means to turn against his Creator. Mankind has the potential to acquire a status higher than that of the angels or sink lower than the lowliest of the beasts.

The word 'Islam' has the dual meaning of submission and peace. Mankind is special, a very particular creation of Allah. But still we are Allah's creation and we can only properly understand ourselves when we recognise that our proper condition is one of submission to Allah who made us. And only when we submit to the Will of Allah can we find peace: peace within us as individuals, peace between man and man, and peace between man and nature. When we submit to the Will of Allah, we become aware of the sublime fact that all our powers, potentials, skills and knowledge are granted to us by Allah. We are His servants and when we are conscious of that, when we realise that all our achievements derive from the Mercy of Allah and when we return proper thanks and respect and worship to Allah for our nature and creation, then we become free. Our freedom is that of being sensible, aware, responsible trustees of Allah's gifts and bounty.

For the Muslim, mankind's role on earth is that of a *khalifah*, vicegerent or trustee of Allah. We are Allah's stewards and agents on Earth. We are not masters of this Earth; it does not belong to us to do what we wish. It belongs to Allah and He has entrusted us with its safekeeping. Our function as vicegerents, *khalifahs* of Allah, is only

to oversee the trust. The *khalifah* is answerable for his/her actions, for the way in which he/she uses or abuses the trust of Allah.

Islam teaches us that we have been created by Allah, that we will return to Allah for Judgement and that we are accountable for our deeds as well as our omissions. The *khalifah* will have to render an account of how he treated the trust of Allah on the Day of Reckoning. The notion that describes the accountability of the *khalifah* is *akhirah* [the Hereafter]. Islam is the guidance of how to live today so that we can face the *akhirah*: it is the Message which informs us of what will be involved in that reckoning.

The central concept of Islam is *tawhid* or the Unity of Allah. Allah is Unity and His Unity is also reflected in the unity of mankind, and the unity of man and nature. His trustees are responsible for maintaining the unity of His creation, the integrity of the Earth, its flora and fauna, its wildlife and natural environment. Unity cannot be had by discord, by setting one need against another; it is maintained by balance and harmony. Therefore Muslims say that Islam is the middle path and we will be answerable for how we have walked this path and how we have maintained balance and harmony in the whole of creation around us.

So unity, trusteeship and accountability, that is *tawhid*, *khalifah* and *akhirah*, the three central concepts of Islam, are also the pillars of the environmental ethics of Islam. They constitute the basic values taught by the Qur'an. It is these values which led Muhammad, the Prophet of Islam, to say: 'Whosoever plants a tree and diligently looks after it until it matures and bears fruit is rewarded', and 'If a Muslim plants a tree or sows a field and men and beasts and birds eat from it, all of it is charity on his part', and again, 'The world is green and beautiful, and Allah has appointed you his stewards over it.' Environmental consciousness is born when such values are adopted and become an intrinsic part of our mental and physical make-up.

And these are not remote, other-worldly notions, they concern us here and now. If you were to ask me what the notion of the Hereafter has to do with here and now, my answer might surprise you. I would say nuclear power and biotechnology. Both of these are very present here-and-now issues. Both have benefits and costs. Both have implications for the health and well being of mankind and nature. If

I sincerely intend to be Allah's *khalifah*, His steward on Earth, then I must have an opinion about them and prepare myself to make choices about them, because I will be accountable for what mankind has wrought with these devices in the Hereafter.

Islam is a very practical world view. It seeks, in all its principles and injunctions, to give pragmatic shapes to its concepts and values. Indeed, the notion of *tawhid* and *khalifah* have been translated into practical injunctions in the *Shari'ah* [Islamic Law]. Such *Shari'ah* institutions as *haram* zones, inviolate areas within which development is prohibited to protect natural resources, and *hima*, reserves established solely for the conservation of wildlife and forests, form the core of the environmental legislation of Islam. The classical Muslim jurist, Izz ad-Din Ibn Abd as-Salam, used these aspects of the *Shari'ah* when he formulated the bill of legal rights of animals in the thirteenth century. Similarly, numerous other jurists and scholars developed legislations to safeguard water resources, prevent over-grazing, conserve forests, limit the growth of cities, protect cultural property, and so on. Islam's environmental ethics then are not limited to metaphysical notions; they provide a practical guide as well.

Muslims need to return to this nexus of values, this way of understanding themselves and their environment. The notions of unity, trusteeship and accountability should not be reduced to matters of personal piety; they must guide all aspects of their life and work. *Shari'ah* should not be relegated just to issues of crime and punishment, it must also become the vanguard for environmental legislation. We often say that Islam is a complete way of life, by which it is meant that our ethical system provides the bearings for all our actions. Yet our actions often undermine the very values we cherish. Often while working as scientists or technologists, economists or politicians, we act contrary to the environmental dictates of Islam. We must imbibe these values into our very being. We must judge our actions by them. They furnish us with a world-view which enables us to ask environmentally appropriate questions, to draw up the right balance sheet of possibilities, and to properly weigh the environmental costs and benefits of what we want, what we can do within the ethical boundaries established by Allah, without violating the rights of His other creations. If we use the same values, the same understanding in our work as scientist or technologist,

economist or politician, as we do to know ourselves as Muslims - those who submit themselves to the Will of Allah - then, I believe, we will create a caring and practical way of being, doing and knowing; a true Islamic alternative to the environmentally destructive thought and action which dominates the world today.

## ISLAM, ECOLOGY AND THE WORLD ORDER

Fazlun Khalid

### The Problem

As easily the most eventful century in human history comes to a close, environmental issues are taking on an increasingly prominent role in our affairs. There is the ever growing realisation that this is not just another problem. Our sustained and massive abuse of the planet for the past four or five centuries is now being noticed by 'mother nature' and she is protesting vigorously, much to our discomfort. News of eco-disasters is commonplace and accounts of environmental catastrophes are now part of everyday media fodder.

In spite of all the governmental, non-governmental, international and national organisations that have been set up, and all the words that have been written on this subject, and all the effort that has gone into producing 'solutions' to the environmental problems we face today, the general consensus is that we are sliding down a slippery slope to disaster at an ever-increasing rate.

The problem is that the conceptual construct which the modern world functions within, is decidedly anti-environment. Society today is about economic progress and material gain and this takes precedence over everything else. Politics is about increasing standards of living and there is only one source from which we can extract wealth to enable us to do this and that is the earth. Exploiting it takes precedence over protecting it. Using gross national products and rates of economic growth as measures of progress is the most obvious manifestation of this. Therefore, any attempt at producing solutions to environmental problems is cosmetic and being cosmetic only lasts a short while, leaving the environment with even more

complex problems to be covered up the next time. It cannot be permanently protected and our lives made reasonably safe unless there is a profound shift in attitudes and a permanent change in the manner in which we conduct our affairs.

Picture something like this: there are two groups of people, on the one hand politicians, bankers, economists and developers digging a big hole with excavators and diggers, usually where it is not wanted, and on the other, environmentalists and local people trying to fill in this hole again with buckets and spades. 'Experts' tell us with unnerving regularity that the eco-balance of the planet is changing and in some places has already changed permanently. For example a report by the World Wide Fund for Nature<sup>1</sup> says:

Climate change will cause ecosystems to disintegrate and species to become extinct. The general trend will be towards loss of bio-diversity worldwide, and the combination of global warming with other human pressures will present the greatest challenge in conservation for decades to come.

We will not be able to meet this challenge until there is a radical paradigm shift, as the value framework we function within is utterly hostile to any kind of permanent amelioration of the situation in which we find ourselves.

The purpose of this paper is to pinpoint two factors that have set us adrift from a mode of living with the rest of creation which was until the 16th / 17th centuries the way the human community functioned the world over. People no matter where they lived and whatever their belief systems, existed in what I would describe as the natural state. All the traditional beliefs, from the great world faiths to tribal religions, like that, for example, of the American Indian, contain basic teachings about humankind's relationship to one another and nature. Although these are expressed in different terms, to suit their particular contexts, each of these teachings conveys the same basic message.

Today, Islam has something very special to offer us as it is the summation of all past teachings and provides us with a positive code of life transactions in the natural state and perhaps provides the only satisfactory alternative to the destructive path we are taking today. The Qur'an and the Sunnah of the Prophet (pbuh) show us the way.

### The Acceleration of History

It is now not uncommon to hear people talk about the pace of life being too fast, that people cannot cope with the speed of change and so on. Certain eminent thinkers and analysts have been busy for some time examining a process which is now described as the Acceleration of History. Alvin Tofler<sup>2</sup> in his popular book *Future Shock* says:

To survive, to avert what we have termed future shock, the individual must become infinitely more adaptable and capable than ever before. He must search out totally new ways to anchor himself, for all the old roots – religion, nation, community, family or profession – are now shaking under the hurricane impact of the accelerative thrust.

The scientist and historian, Henry Adams<sup>3</sup> propounded a theory in the early part of this century, which suggested that the acceleration of technological change was forcing the acceleration of history. It will suffice to say for our purposes that Adams constructed a graph on a logarithmic time-base to show that there was a relationship between the rate of consumption and utilisation of energy and what is described as technological progress. The result was an exponential curve,<sup>4</sup> and he observed that the acceleration of the 17th century was rapid and that of the 16th century startling. He further observed:<sup>5</sup>

The world did not double or treble its movement between 1800 and 1900, but measured by any standard known to science ... so-called progression of society was fully a thousand times greater in 1900 than in 1800;...

What is interesting about Henry Adams' graph is that it ran parallel to the base line for a time and then rose dramatically. And now towards the end of the 20th century, they are close to and run almost parallel to the vertical axis. Adams said in 1905:

... at the accelerated rate of progression since 1600, it will not need another century to turn thought upside down. Law in that case would disappear ... and give place to force. Morality would become police. Explosives would reach cosmic violence. Disintegration would overcome integration.<sup>6</sup>

All these forecasts have either unravelled themselves or are in the process of doing so and the point of crucial interest for us in this analysis is the time at which the graph began to rise. An examination of this will show that it began to take its upward path during the period covered by the 16th and 17th centuries. It is during this period that the two factors that levered us out of the limiting boundaries of the natural state occurred. We will now examine this.

### The Natural State

This is not a description of an idyllic, utopian dream. Until quite recently in history people the world over functioned within the confines of the natural limiting principles of creation. Regardless of whether we are talking about small, self-governing communities or vast empires, barbarian tribes or points of high civilisation, rebels or conformists, the ignorant or the enlightened, the human race functioned unconsciously within natural, unwritten boundaries. People in the *fitrah*, to use the Islamic term, were not basically different from us. They had the same positive and negative human attributes we have today but the big difference was that the propensity to good action or bad was contained by the natural order of things. This describes an attitude that transcends technology and political sophistication and even religious disposition. There was then an unconscious acceptance and an intuitive recognition of the natural order.

Humankind was seen as part of creation and tightly interwoven into the fabric of nature. There was no separation. Excess in the natural order was contained because it was bio-degradable. When old civilisations, however opulent, profligate, greedy, or brutal died, the forest just grew over them. They left no pollutants, damaging poisons or nuclear waste.

Islamic teaching offers us an opportunity to define what the natural order is and to locate the human being in it. It could be said that the limits of the human condition are contained within four principles. They are *tawhid*, *fitrah*, *mizan* and *khilafah*. A brief examination of these principles follows.

**Tawhid:**

*Tawhid* is the fundamental statement of the oneness of the Creator from which follows everything else. It is the primordial testimony of the unity of all creation and the interlocking grid of the natural order of which man is intrinsically a part. Allah says in the Qur'an:

*Say: He is Allah, One, Allah the Everlasting, who has not begotten, and has not been begotten, and no one is equal to Him.* (Surah 112)

About creation:

*To Him belongs whatsoever is in the heavens and the earth, all obey His will. And it is He who originates creation.* ... (30:26)

About people:

*The people were one nation;* ... (2:213)

About the soul:

*Mankind, fear your Lord, who created you from a single soul*  
... (4:1).

The whole of creation being the work of one Originator works within one stable pattern however complex. All creation belongs to the Originator and obeys His will and truth permeates through all of it. There is only one nation, and mankind was created from one soul. Thus creation was designed to function as a whole with each of its complementary parts playing its own, self-preserving role which in so doing supports the rest. The role of man, who has a will of his own and is thus capable of interfering with the pattern of creation, is one of submission. This is a path to accepting that there must be limits to his actions, and consciously recognising his own fragility.

**The fitrah:**

The *fitrah* is the natural pattern of creation itself and the Qur'an locates humankind in it -

*So set thy face to the religion, as a man of pure faith - Allah's original upon which He originated mankind.*

*There is no changing Allah's creation. That is the right religion, but most men know it not -*

(30:30)

Allah created humankind as part of His original creation to function within its primordial pattern. Man was then quite naturally subjected to Allah's immutable laws as was the rest of creation. In this sense, human beings are equal partners with nature. The different elements of the universe working together will keep it in balance (See *Mizan*). Creation cannot be changed and this explains natural phenomena like earthquakes and storms which are adjusting mechanisms that keep the earth in order. But does man understand all this?

**The Mizan:**

In one of its most eloquent passages, the Qur'an describes creation thus:

*The All-Merciful has taught the Qur'an, He created man and He taught him the explanation. The sun and the moon to be a reckoning, and the stars and trees bow themselves; and heaven - He raised it up and set the balance. Transgress not in the balance, and weigh with justice, and skimp not in the balance. And earth - He set it down for all beings, therein fruits and palm trees with spathes, and grain in the ear, and fragrant herbs. Which of your Lord's bounties will you deny?*

(55:1-13)

Humans were created not as beings that function exclusively on instinct. They are creatures of reason and therefore were taught the explanation - the capacity to understand. All of creation has an order and a purpose. If the sun and the moon did not follow courses of stable orbits and the rest of the world did not function as it was expected to, it would be impossible for life to function on earth. So we have a responsibility to behave justly, actively recognising the order that is around us, for ourselves, as much as for the rest of creation.

***Khilafah:***

*Khilafah*, or the role of guardianship, is the sacred duty Allah has ascribed to the human race. There are many verses in the Qur'an that describe man's duties and responsibilities and the following three give us a basis from which we may begin to understand our position:

Firstly:

*It is He who has appointed you viceroys in the earth, and has raised some of you in rank above others, that He may try you in what He has given you. Surely thy Lord is swift in retribution; and surely He is All-forgiving, All-compassionate.*

(6:165)

Humankind was given a special place:

*We have honoured the children of Adam and carried them on land and sea, and provided them with good things, and preferred them greatly over many of those we created.*

(17:70)

and leadership:

*Of those we created are a nation who guide by the truth, and by it act with justice.*

(7:181)

Humankind has a special place in Allah's scheme – we are more than friends of the earth – we are its guardians. As we are ourselves likely to go astray, Allah ordered us in a hierarchy of leadership; those who recognise the truth should lead the rest of us so that we may act with justice.

We may deduce from these four principles that the natural state of existence functions because the whole of creation is in submission to the Creator. Man is the only being on earth that can choose not to submit – that is why he is required to. His responsibility is then to recognise that he was created within it and is of it. There is balance and order in the universe and it cannot be changed. Humankind's role

is a privileged one of guardianship to maintain a just balance by recognising the needs of the rest of creation.

**Breaching the Limits**

Two events occurred during the course of the rise of European, Christian power in the sixteenth and seventeenth centuries, which fatally breached the outer perimeters of the natural order. The first of these was when the Church legitimised usury (the taking and giving of interest on money lent and borrowed) in 1535. This was the consequence of the edict of Calvin which followed hard on the heels of the reformation of the Church. The second was a change in man's perception of himself in the universe, triggered by the thoughts of the French philosopher-mathematician, René Descartes, who lived in the first half of the seventeenth century. It must, however, be said that this chronology is misleading as each of these two events were expressions of movements in thought and action with long histories. As the Cartesian revolution subsequently provided a rational basis for the rise of the usurocracy, we will look at this first.

**Mind and Matter**

Descartes, by introducing another model of looking at the world gave added impetus to burgeoning secularism which has today marginalised belief systems popularly called religions. Secularism is itself now seen to be a belief system and for many it has replaced traditional religion. In previous epochs societies functioned as though religion was part and parcel of the overall pattern of life and perhaps the most important part of it. There was no separation and in this sense there was no religion. Special rituals and systems of hierarchy did not detract from this. Today, Muslims, although fragmented, form the only world community that is attempting, at great odds, to retain this age-old patterning and form a bulwark against the corrosive effects of secularism.

The secular principle is embodied in the now familiar Cartesian paradigm, 'I think, therefore I am'. Descartes propounded a dualism<sup>7</sup> that separated mind and matter and allowed for the development of science on purely mechanistic lines. He saw the universe as a machine, and the earth and all living things as its component parts.

Nothing was to be accepted as true until it could be examined, experimented upon and verified. Thus, scientific enquiry became amoral, 'without having to make room for purposes, goals and other characteristics of mind and spirit'- a far cry from the *fitrah*. Descartes sowed the seeds of doubt in the soil of the human community.

It must however be said that the examination of the mind / body dichotomy has been a peculiarly European preoccupation since the time of the classical Greek philosophers. Plato proposed that the intellect and sensory experience were two different things. But Descartes, who built his ideas on the thoughts of the Greeks, went much further. Cartesian doubt tore the human community from its 'familiar social and religious context and thrust us headlong into ... our "I-centred culture"'.<sup>8</sup>

'Man, according to Descartes, is a thinking mind stuck in a material body, looking out on an alien world'.<sup>9</sup> Cartesian dualism, the subject / object, mind / body, spirit / matter split, soon became the dominant world view. Cartesian scepticism replaced the reason of the ages with scientific rationalism. Anything that could not be proved by measurable data was confined to the realm of doubt. Intuition, experience, the accumulated wisdom of the ages and even revelation, which until then had played a significant part in human progress, was relegated to the status of superstition. This virus took hold of the Church and European seats of learning quite rapidly. Before the century was out, Newtonian physics had turned the world into a clockwork machine and Adam Smith's *The Wealth of Nations* did much to give credibility to emergent capitalism.

The fact is that most of us are Cartesian at heart, although we do not know that we are. And we do not know that we do not know. The entire education system that we worship, from primary school to university education and the postgraduate doctoral system is Cartesian. Seeing and understanding how this is connected to the political and economic order will give us an idea how we have been and are colluding with each other in destroying the *fitrah* and upsetting the balance of nature, consequently subverting our very existence.

It would now seem, at this possibly late stage, that scientific rationalism has come up with a problem. As scientists now grapple

with the problem of the elusive nature of matter, Cartesian dialecticism has been hoisted by its own petard. Quantum physics cannot rationally explain the behaviour of matter at the subatomic level. At the frontier of scientific knowledge, cause and effect relationships are no longer valid. We are told that in reality there is no space between separate objects and the whole notion of separateness has no foundation in reality (Muslims have been describing this as the unity of creation for some time). The big question in Quantum Physics is, 'How can anything ever be?' This uncertainty has replaced '... the old Newtonian determinism, where everything about physical reality is fixed, determined and measurable, ...'.<sup>10</sup>

#### The Advent of the Usurocracy:

Enough evidence is now available to demonstrate to us that there is a great deal wrong in the way the world economic order is run. Banks are behind every government, every business large or small, and every project - international, national or local. In fact banks run our everyday lives by the very fact of our using the tokens of exchange they mint and print and which we call money. There is also enough evidence to convince us that there is something fundamentally wrong with the way the whole banking business is conducted, but our analysis leads us to the conclusion that changing bank practices will not solve the problem. The banks themselves are the disease and their continuing survival depends on the existence of a parasitic virus called interest, previously known as usury, and equally importantly, their ability to create credit - that is, conjure wealth out of nothing.<sup>11</sup> The Islamic definition of *riba* encompasses this second point, which is obscure although it happens every day, in every bank, everywhere in the world and is hardly ever discussed by the 'experts'.

Usury, which is best defined as taking something for nothing, is as old as civilisation itself. This practice was condemned by classical Greek philosophers like Aristotle<sup>12</sup> and the great Christian theologians, St Augustine and St Thomas Aquinas.<sup>13</sup> The ancient Jews however, claimed scriptural license to practise usury against those who were not Jews. The Old Testament in Deuteronomy 23:20 states:

Unto a stranger thou mayest lend upon usury, but unto

thy brother thou shalt not lend upon usury.

The Jews were thus the only community to have practised usury continuously from ancient times to this day. It should also be noted that the Old Testament, in Leviticus, Deuteronomy and Ezekiel, prohibited usury. The major change in Christendom as we have seen, took place when Calvin legalised usury in 1535.<sup>14</sup> The European, Christian states expanded rapidly on the basis of the free availability of credit. The so-called 'voyages of discovery' (which had their origins before Calvin) were followed by territorial expansion, mercantilism and imperialism which lasted until the great wars. This whole process, including the building of military and naval power, was facilitated by long-established money lenders who provided this service for Christian rulers, adventurers and merchants. It is not a secret that banks were, and today still are, more powerful than governments.

In spite of the strict prohibitions in the Qur'an on *riba*, Muslim states and individuals, both rich and poor, are now eager players in the banking game.

The basic principles on which today's banking system thrives and every one of us depends, were developed by goldsmiths during the European Renaissance. They started off by being possibly the only people of commerce in those times to possess well-guarded strong rooms. The rich deposited their money, that is gold, silver, precious stones and other valuables with them, in return for which receipts were issued. These receipts which were the prototype bank notes, circulated freely. The goldsmiths discovered that only a small minority of depositors withdrew their valuables at any given time, thus leaving them with large deposits of liquid wealth for long periods. Because of this liquidity, they felt safe in issuing extra receipts over and above the value of the money that was in their safe-keeping, in the form of loans, and charged a rent (interest or usury) for these receipts.

These transactions had three basic deceptions attached to them. Firstly, the money that formed the basis of the loans was not the property of the goldsmiths. Secondly, the value of the notes in circulation did not match the value of the money in storage. By a painless stratagem these goldsmiths had managed to conjure 'money' out of thin air. And thirdly, a rent was charged on these valueless

notes. What the goldsmiths did was to use other people's wealth to create artificial wealth which, by a strange metamorphosis, the general populace believed to be real. These overtly fraudulent activities now carried out with a much greater degree of sophistication, form the basis of high street banking today, with the additional approval and legal backing of the state. A senior school textbook says about this matter, 'It seems like a gigantic confidence trick. People part with valuable goods and services in exchange for bits of paper ...'.<sup>15</sup>

All the money we see today is created by the banks. Paper and coins make up only 5% of this, the rest being plastic card money, ledger entries and blips on computer screens. Any basic textbook on economics will tell us how money is created but it is sufficient for us to know that £1000 (which itself has been created by this very same process) deposited in a bank can, through a simple process, be turned into £15,000 or more. This is connected to reserve ratios and the multiplier principle.<sup>16</sup> This explosion of artificial wealth is used to exploit resources, create industries and improve standards of living. The implication of this is that money as we know it today has the basic attribute of a parasite. We can immediately see how wealth conjured out of thin air attacks tangible and finite resources - the *fitrah* - and will, if allowed to carry on, reduce this planet to a moonlike wilderness. The incentive for all this activity is *riba* which goes well beyond our understanding of interest and usury. Allah says in the Qur'an:

*Those who devour riba shall not rise again, except as he rises whom Satan prostrates by his touch.*

(2:275)

*O believers, fear your Allah; and give up riba that is outstanding, if you are believers. But if you do not, then take notice that Allah (and His Messenger) shall war with you.*

(2:278-9)

No other prohibition in the Qur'an contains such forceful language and unlike the restrictions on food, there are absolutely no concessions in

this area. We are now beginning to understand why this is the case, although certain Muslim scholars in the name of progress are trying to argue otherwise. The issues that relate to credit creation are obfuscated by the arguments over interest but are nevertheless a matter of equal, if not greater concern. *Riba* has a wide definition and if the charging of interest covers the notion of unlawful gain when a rent is charged on capital and is prohibited, then gains that arise from profits made from intangible created capital also fall within this category. This fraud assumes greater proportions when the banks demand and get security or collateral for the non-money they give us as loans. What is at stake here is the principle of justice - *mizan* - equal for equal in a freely and openly entered-into transaction. The human project is to contain greed but the state and the banks have colluded in institutionalising and legitimising it.

Aristotle said, as far back as 350 BC, 'Money being naturally barren, to make it breed money is preposterous'.<sup>17</sup> John Kenneth Galbraith, a renowned American professor of economics, said in the latter half of the twentieth century, 'The process by which banks create money is so simple that the mind is repelled'.<sup>18</sup>

### A Return to Sanity

Descartes' conclusion at the end of a well-known passage reads, '... render ourselves the lords and possessors of nature'.<sup>19</sup> Cartesian rationalism licensed the human community to plunder the earth. The new usurocracy provided the means with which to do it. The system is set in concrete - the nation state is the cement and the banks the reinforcing steel. It is now not difficult to detect areas in which the cement is crumbling and the rust of the steel oozing through its mass. It is also important to understand that there has been only capitalism-communism and socialism are different expressions of it. Communism collapsed because of its resort to totalitarian methods of control, and police states have short lives. The more benign Western form survives because it is intensely manipulative and adaptive. It has the capacity to perpetuate hedonistic consumer values in an infinite variety of ways, and keep the population preoccupied, while the politicians who vie with each other for power collaborate with the élites operating within the global banking network.

The problem is also one of size. The empire is global and the rulers are unseen - the people are remote from the centres of real power. This feeling of helplessness is assuaged by the palliative of consumerism: consumer goods have only once source - the earth. The price we pay for this is visible in the ever growing catalogue of eco-disasters which have brought about the environmental crisis. An important part of the answer is to revert to small self-governing communities where power centres are visible and approachable; where people, instead of being controlled, have control over their own lives.

The gradient of a graph representing the growth of credit since, say, the establishment of the Bank of England in 1694 would look even more startling than the Adams Curve (see Acceleration of History above). It has to be remembered that this exponential creation of credit is non-wealth; it does not represent anything but entries in bank ledgers and balance sheets. It cannot be emphasised enough that this wealth which helps us to sustain the fiction of standards of living, does not exist in reality. But, this infinite amount of nothing is used to attack the finite resources of creation. It is not difficult for anyone to conclude from this that if the human race carries on like this the earth will soon be reduced to an empty desert. What we call progress is a long fuse to oblivion. This is self-inflicted subversion.

Gerard Piel, another scientist, revived the work carried out by Henry Adams on the acceleration curves fifty years later and came to conclusions similar to that of his predecessor.<sup>20</sup> Piel had this to say:

The acceleration of history has brought the human species to the fork in the road. One way from here goes to a dead end; ... history has not long to run. The other less plainly marked, may yet show our species the way to the realisation of its humanity.

Piel further suggests:<sup>21</sup>

... Civilised communities have employed force and violence, tempered at times by fraud, to hold their members together against the inequities that divide them...

Comprehending the situation we are in now could understandably lead one to the conclusion that there is a collective madness afoot. Impossible as it may seem, we must not just stop where we are if we

are to survive as a species, but must retrace our steps some way back. The advocacy of balanced sustainable growth is now seen to be flawed and the idea of negative growth needs now to be taken seriously. The habit of taking out of the earth must now be replaced by the one of putting things back into it.

To function within the limiting principles of creation, if only to leave behind an earth that is liveable for our children and theirs, we need to reabsorb the certainties of *tawhid*, and regain our role as *khalifah*. This will give us a sense of where the *mizan* is and locate our awareness in the *fitrah*. The Qur'an says:

*Corruption has appeared in the land and sea, through what men's own hands have earned, that He [Allah] may let them taste some part of that which they have done, and haply they may return.*

(30:41)

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## ISLAM'S GUIDING PRINCIPLES FOR A SOLUTION TO ENVIRONMENTAL PROBLEMS

**Isma'il Hobson**

'The beginning of wisdom is the fear of Allah', and the knowledge that no deed and no attitude can escape its consequence in this world and the next, is one path to that beginning.

Nothing stands by itself; everything is under the hand and eye of Allah. This entire universe, and the universes which lie beyond it, are a harmony in which, and to which, each particle of existence is ordained and necessary; nothing can be added and nothing taken away:

*Not a leaf falleth, but He knoweth it (Q. 6:59)*

But all the created universes, and all that they contain, are as nothing before the immutable Bounty and Majesty of their Creator:

*Verily Allah is All-Rich and Independent of the worlds (Q. 29:6).*

*All who dwell thereon are transient, and there shall abide the face of thy Lord full of Majesty and Generosity (Q. 55:26-7).*

*All things perish, except His face (Q. 28:88).*

The beginning of wisdom is therefore fear of Him Who, were it His Will, could reduce our universe to ashes in an instant. But the end of wisdom is - if one can so put it - to love Allah, Who does not do this.

In our daily prayers, we Muslims sometimes insert a supporting formula of words: 'O Thou! Possessor of Majesty and Beauty, Eternity, Infinity and Generosity!' In other words, we acknowledge - besides the power and majesty of Allah and all His attributes of absoluteness - the Beauty of Allah, which 'all who have hearts' can see dimly reflected in paradisal forms in the created world, and the Generosity of Allah, which is manifest in the endless variety and abundance of these created forms and, not least, in the gift to us of this

present life and in the promises made to us for the life to come.

*That home of the Hereafter, We give it to them that desire neither to exalt themselves in the earth nor to work corruption (Q. 28:83).*

How, then, do we stand in this world? In the following pages, this is briefly considered in particular relation to what are referred to today as 'environmental problems'.

### Allah, Man and the World

*It is He (Allah) that has appointed you (mankind) as regents in the earth. (25:39)*

*'The world is sweet and verdant green, and Allah appoints you to be His regents in it, and will see how you acquit yourselves ...' (Hadith: Muslim)*

There can be few people in the developed world today who are unaware of environmental problems and none at all who are immune from them: the greenhouse effect and the changing climatic patterns that could raise sea levels, submerge low-lying land and reduce the world's habitable area; the razing by fire and bulldozer of the tropical rain-forest at a rate which, if it continues, will mean the complete deforestation of the world within forty years; the extermination of wildlife which has led to an unprecedented, and still accelerating, extinction rate of species of birds, insects and mammals; the pollution of the atmosphere and the air we breathe; the bestrewing of land, sea and outer space with rubbish; the creation of urban landscapes of such desolation that they corrupt even the souls of children, who scrawl their demented graffiti in every public place; and pollution of the mind and conscience - the growth of lawlessness, disregard for the neighbour, irreligion.

This shrivelling of the human spirit - and the accompanying ugliness and oppression - is explicable only as a withering of intelligence or, to put it in other words, as intelligence cutting itself off from the Divine source. A saying of the Prophet Muhammad (s.a.a.s) tells us that the

first thing that Allah created was the Intelligence. And this is bound to have been so, for the whole of creation is shot through and through with intelligent patterns of birth, growth, competition, collaboration, destruction and rebirth, in which are involved forces of inconceivable power and a majestic harmony that is continually renewed, to create the environment of living beings, the air they breathe, the sunlight from where energy is drawn, plants for food, living forms for food - in short, a deployment of intelligence that is godlike.

Not to perceive this and to be immune to wonderment is not only a kind of atrophy of the intelligence, but also ingratitude for the gift of life and disregard of the Giver. Indifferent acceptance of the world and the human condition, even if it does not actually go so far as denial of a Creator, is still culpable; we should not accept gifts with no thought of their source or of the duty of paying for them. It is not without significance that the Arabic word for 'religion' and 'judgement' carries overtones of 'debt'; the Day of Judgement *yaum ad-Din* is also the Day of the Debt's Repayment. 'Disbelief,' in Arabic *kufr*, also means 'ingratitude'; 'indifference', in Arabic *ghaflah*, is a kind of death. This is what is implied when the Qur'an declares that its message is to warn '*those that are alive (man kana hayya)*' (36:70).

Those in whom intelligence is atrophied to the point of not seeing - and not wishing to see - beyond the world are dead in all but an animal sense. But it is possible for even them to be worried - the exploitable asset that is this planet seems to be at risk. It is at this level that the various 'green' movements still operate. The worriers then divide their preoccupations into the skills or specialisations they each command. Botanists worry about plant species that are disappearing; biologists worry about the extinction of the dodo and the possible extinction of the African elephant and the Indian tiger, which some deplore 'on aesthetic grounds': they would like their children to see rhinos, just as they would have liked to see dodos'.

The article we have quoted from also makes the point that, in our 'pragmatic age', there are practical reasons for 'preserving diversity', i.e. for hoping that not too many plant and animal species vanish. These are then listed in some elaboration:

- (i) Some little-known plants, fish and animals may turn out to be

valuable food just as the dodo and the seaweed-eating sea-cow, both now exterminated, could perhaps have been domesticated as farm animals.

- (ii) Many tropical plants, insects and animals may well prove to be sources of invaluable chemicals and medicinal drugs.
- (iii) Domesticated plants and animals benefit from being able to draw on a broad 'gene pool' to maintain present yields or increase them.
- (iv) Care is called for, because the interdependence of many plants and creatures means that, if one goes, all go, e.g. the disappearance of one insect that pollinates a particular tree dooms that tree and all the creatures that live on it or under its protective shade.

The same article discusses solutions - the creation of national parks, perhaps, that preserve nature in a wild state, or making local peoples into guardians of profitable natural assets at the same time as somehow reflecting their value 'in cash' for them. It points out, finally, that extinction is irreversible. That is certainly true, at least in this world.

It would not be difficult to draw upon innumerable articles in newspapers and magazines and in many detailed and excellently argued books for points similar to the above, all distinguished by (a) extraordinary knowledge, (b) academic or professional specialisation, and (c) utilitarian considerations, not excluding apprehension that man's carefree days may be numbered - food may grow scarce, oil may run out, AIDS may decimate certain African nations, there will no longer be timber for housing and furniture, etc. etc.

It is, however, only the spiritually alive person, one qualified for the title - even in an attenuated modern sense - of 'Allah's regent in the world', who can see the problem with wisdom as opposed to researched information, with wholeness as opposed to fragmentary apprehensions, and with a sense of loving duty to Allah and other people, as opposed to the utilitarian considerations of a possibly diminishing asset.

There is no Islamic doctrine of the environment in the urgent, narrow, modern sense. There is, however, a doctrine relating to man's duty to Allah, to his fellows and to the world that encompasses everything relevant to the question. In brief, each child of Adam, all of whom Allah has blessed and declared blessed, must acknowledge the Creator:

*We (Allah) have blessed the children of Adam (17:70)*

*Am I not your Lord? (7:172)*

Human beings should also praise their Creator in acknowledgment of the gift of life in this world and the potentiality of bliss beyond. In these duties and potentialities they are at one with all their fellows. To be created human is, in accordance with a saying of the Prophet Muhammad (s.a.a.s), to be created in the image of Allah. This is to say that human beings have powers, rights and duties above all creatures and, indeed, above the very angels: the angels cannot but obey Allah and praise Him, just as all creatures praise Allah by their very existence, whereas human beings alone are gifted with free will, in which sense they are made in Allah's image, and can thus choose either to obey or to disobey. They are nonetheless warned that disobedience, which will bring retribution, is imprudent and unintelligent; their role, as is made quite clear in Islam, is to be Allah's regent, or representative, in creation and this trust is truly awesome. Referring to this, and to the inevitable falling-short of human beings in their trust, the Qur'an says:

*We offered the trust (al-amana) to the Heavens and the earth and the mountains, but they demurred from the bearing of it and were frightened by it, but man bore it; surely he has proved benighted, ignorant.*

(33:73)

The regency of human beings necessitates both awareness of Him Whose regent they are and love of all the plants and creatures whose rulers, enjoyers and protectors they are appointed to be. The Qur'an is therefore replete with verses that link the beauties and wonders of the natural world with gratitude to their Creator and the need to express that gratitude in the worship of Allah and the love of His creation. The point is, that these have to go together: any pretension to care for the 'environment' is bound to be either false, selfish or fragmentary and thus short-term and short-sighted, unless it is grounded in awareness and love of Allah, the Creator.

For the Muslim, the created world is itself a revelation of Allah's Power and Beauty, a Book in which - as in the Qur'an - Allah has set

forth His Signs. If the whole perceptible universe is a revelation of Allah's Power and Majesty, so is the Qur'an a revelation of Allah's Power, Beauty and Mercy. He Who sent down the Qur'an into the world is He that created the world; this is a fundamental equation for the Muslim believer. The Qur'an is '*...A Revelation from Him that created the earth and the highest Heavens*' (Q:20:4).

The Creator and the Possessor is Allah. Therefore, any offence against the creation, any failure to acquit oneself well as the protector of Allah's creation, is an offence against Allah:

*To Him belong whatever is in the Heavens and whatever is on the earth, and whatever is between them, and whatever lies beneath the soil.*

(20:6)

*His (Allah's) is the dominion of the Heavens and the earth, and to Allah are matters returned,*

(57:5)

*And there is naught but that its treasures are Ours, and naught do We send down except in due proportion. And We loose the winds as forces of fecundation and send down water from the sky, and We slake your thirst thereby; but ye are not its treasurers. For We, even We, bring life and death and We are the Inheritor.*

(15:21-23)

The world, being man's responsibility, is likewise Allah's gift to him for his sustenance during his sojourn in it, brief though that sojourn is against eternity:

*All-Blessed be He in Whose Hand is the dominion and Who is over all things All-Determining; Who has created death and life that He might test you, which of you be the best in act; and He is the All-Mighty, the All-Forgiving.*

(67:1-2)

*Let man look on his nourishment! How We pour out the pouring rain and split the furrowed earth and therein grow forth grain and grapes and clover, olives and date-palms, orchards rich with trees, and fruit and provender, a ministration for you and your flocks.*

(80:24-32)

*It is He Who sendeth rain down from the sky for you to drink of it, and from it grow the trees wherewith ye feed your flocks; for you, He bringeth forth with it the crops, the olives, dates and grapes and every kind of fruit; surely in this there is a Sign for folk that take thought.*

(16:10-11)

*O ye people! Worship your Lord! Who created you and them before you, that perchance ye may be God-fearing; Who made the earth a couch for you and Heaven a canopy, and sent down rain from Heaven, and thereby brought forth fruits as sustenance for you; so, knowing this, set up to Allah no rivals!*

(2:21-22)

Nor does the Qur'an omit to remind human beings of their fellowship with the beasts and birds and all living creatures, all of whom will, after this world, be gathered to their Lord. It is important to understand this, for the extermination of species in this world does not mean their extinction *in eternis*; in the realm of the Real, nothing can perish.

*Seest thou not of Allah, that all things in the Heavens and the Earth give praise to Him, and the birds in flight outstretched? Each one knows his mode of praise and prayer, and Allah knows everything they do, for Allah's is the dominion of the Heavens and the earth, and to Allah is the homecoming.*

(24:41-42)

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(24:41-42)

*There is no beast that walketh in the earth, nor bird that flieth on its wings, but are nations like yourselves; nothing have We omitted from the Book; then to their Lord they shall be gathered.*

(6:38)

If one looks at Islamic civilisation as it existed during the classical medieval period, one cannot but be struck by the lack of expression of any anxiety about the world's resources. The same can be said of all the other great civilisations except the present one; it was true of China, India, Greece, Rome, Persia and even medieval Europe. This is not to say that there were not abuses, occasional imprudent cultivation patterns that desiccated the land and eroded the soil, or hydraulic civilisations that incurred nemesis by over-ambitious irrigation projects, or, more usually, by warfare that interrupted administration with devastation, sometimes beyond repair. But the scale was smaller, the subject never became obsessive, there was a fundamental balance.

This was, in large measure, the result not so much of a sane ecological awareness as a lack of means to upset the balance which inheres in nature, even in domesticated nature. On this point, too, the Qur'an and the Prophetic traditions are clear: there are divinely-imposed bounds to knowledge and activity, and what goes beyond them is Satanic by reason of its lack of love and deferential fear. Generally speaking, these bounds were not transgressed by human beings until the European 'Age of Reason', followed by the industrial and scientific revolutions of the nineteenth and twentieth centuries, with a particular acceleration during the last fifty years. Hence the perilous lack of equilibrium and the inevitability of redress.

The Qur'an speaks of the need to respect the bounds of knowledge:

*And pursue not that of which thou hast no knowledge! Surely (your) hearing and sight and inward sensibility - all those shall be called to account.*

(17:36)

And it touches upon the inevitable redressing of the balance.

*And when men have forgotten what they were reminded of, We open to them the gateways to all things until, as they rejoice in what is given to them, We seize them very suddenly and behold! they are brought to nothing!*

(6:44)

As to the essential equilibrium that rules the natural world, the Qur'an pictures it as a balance, or a set of scales (*mizan*) that was set up in Heaven when Heaven itself was raised, and which must not be transgressed at any level, whether at that of the harmony of nature or in the spheres of human justice, morality or everyday commerce. In Islam, the principle of balance, measure and moderation is all-pervasive; when it is contravened so that, for example, either fanaticism or environmental pollution emerges, then Islam is betrayed.

*And Heaven, He (Allah) raised it high, and established the Balance (saying), 'Do not transgress the Balance and give weight with equity, and let the Balance not fall short.*

(55:7-9)

Speaking on the commands, prohibitions, imposed limits and subjects omitted in the Qur'an the Prophet Muhammad (s.a.a.s) said:

Allah has declared certain things obligatory; do not neglect them! He has declared certain things forbidden, do not commit them! He has set limits; do not go beyond them! About certain things He has been silent, and this is not out of forgetfulness; do not enquire into them!

(*Mishkat al-Masabih*)

In brief, Islamic doctrine, as contained in the Qur'an and the Prophetic sayings, encompasses a range of principles which, if they were obeyed, would prevent environmental problems arising in the first place. In the present situation, where these problems already exist as a potent danger, the application of these same principles could, if not dispel the dangers, at least alleviate them.

But that is not the only point. The truth is that environmental problems are no more than a single segment of the evils that descend

when people think to control their affairs and exploit the earth by reason alone and by considerations of utility, rather than by the light of Heaven. Now, the Light of Heaven is Revealed Truth and the latest, and therefore freshest, Revelation is that of Islam, which subsumes and perfects all the revelations that have preceded it. Moreover it is, on the Word of Allah Himself, the last revelation to mankind and not to be superseded or qualified by any further revelation before the 'Last Days'.

To understand this is assuredly to be subject to that fear of Allah that is the beginning of wisdom. Contrary to modern habit, matters cannot be profitably discussed in isolation; earth's affairs require the guidance of Heaven; the world cannot be taken into meaningful account if Allah, its Creator, is omitted from it; utility cannot dispense with morality; human beings, the exploiters, are vile creatures unless their exploits are tempered with an awareness of the duty to protect and control, to be Allah's regents - or vicegerents (in Arabic *khalifah*) in the world. And, finally, the world itself is either an enigma or a meaningless, material accident, unless it is perceived to be, as the Qur'an says, replete with the Signs of Allah and itself a Revelation from the Creator:

*Verily, in the creation of the Heavens and the earth and the alternation of night and day, are Signs for people of inward understanding who remember Allah, standing and seated, and upon their sides, and ponder as to the creation of the Heavens and the earth: 'Our Lord! Not for naught didst Thou create this; all praise to Thee, then save us from the torment of the Fire!*

(3:190-1)

## ISLAM AND THE ENVIRONMENT

Charles Le Gai Eaton

Spirit and form, the inward (*al-batin*) and the outward (*az-zahir*) questions regarding the human environment and its significance have to be dealt with from different perspectives. There is the spiritual perspective and there is the practical, earthly one. They do not contradict each other; on the contrary, they are - like everything else in our lives and in accordance with the principle of Unity (*Tawhid*) - inter-connected. For Muslims, there can be nothing outside the orbit of the Faith, since there is nothing outside Allah other than His own 'outwardness'.

Every problem that we face and every question that we ask relates back to the Centre, and the Centre is always Allah. This world, this universe, and all that it contains is not some chance agglomeration of material atoms, unconnected with our being; it is the *mazhar*, the theatre created for us, in which we live out our personal dramas and fulfil our destiny. The scenery and what, in a theatre, are called the 'props', satisfy all our genuine needs, and the cosmos itself is neither more nor less than the landscape through which we pass on our journey towards the predestined end.

Already at this stage a brief digression seems necessary. Both the Qur'an and the Bible describe this world as made for us and for our use. Christians in recent centuries and their heirs in the post-Christian age have taken this as licence justifying the greedy exploitation of the natural environment. Muslims, in the light of the Qur'anic teaching and in terms of the doctrine of man as *Khalifah*, perceive - or should perceive - primarily our responsibility to all that surrounds us. But I mean to return to that theme later in this paper.

Among Muslims today there are two particular groups which deny or ignore the importance of outward forms. As it happens these groups

are at opposite ends of what might be called the Islamic 'spectrum'. On the one hand we have the 'modernists' who insist that 'outward things', including much that is required of us by the *Shari'ah* (Islamic Law) in so far as it deals with outward forms, do not matter. All that matters, they say, 'is what you have in your heart.' This argument is, to say the least, naive. Our hearts are constantly influenced and may eventually be transformed by our immediate environment and cannot be isolated from this environment. It does not seem to occur to them that if we live in a physical setting which is entirely alien to our Faith, entirely secular and profane, then the likelihood is that this setting in which we live out our lives will drain faith from our hearts, instead of supporting and nourishing it.

The second group to which I referred is made up of those who are commonly described as 'fundamentalists', and this includes the political revolutionaries. Whatever you choose to call this particular segment of the *Ummah* (Islamic community), they are characterised by a similar attitude. They do not say 'all that matters is what you have in your heart,' but they say 'all that matters is the moral rule', the distinction between what is (in their view) *halal* and *haram*. This morality is, so to speak, removed from its context within the totality of the Muslim's life, and is expected to operate in a kind of vacuum. They forget, if they ever remembered, that *Allahu jamilun yuhibb ul-jamal* (Allah is beautiful and loves beauty).<sup>22</sup> In this way they remind me of Protestants within the Christian fold who see no reason to beautify their surroundings or to make these surroundings more fitting for the worshipper. Like our so-called 'fundamentalists' they regard beauty and even comeliness as a luxury which is to be despised by those intent upon a moral 'crusade'.

Now at a very early stage and with astonishing speed and effectiveness, the Muslims constructed around themselves a human environment which was in accordance with their religious needs and in accordance with their inner faith. This seems to have happened spontaneously, it was, so to speak, a natural by-product of the new, revealed Faith. It demonstrated that beauty and comeliness can be combined with the utmost simplicity and with practical considerations. The traditional Islamic city was so constructed that it facilitated adherence to the *Shari'ah*. It encouraged worship and, by its structure and lay-out it provided the ideal setting for the Muslim's daily life.

Moreover, it blended perfectly into the surrounding natural environment. It was not, as are Western cities today, a denial and a defiance of the natural world. Let us say that it 'belonged' where it was, a human habitation as much in accordance with Allah's creation as the spider's web or the bird's nest, yet with an extra dimension in that it was designed as a home for those who choose consciously to worship and praise their Creator.

The Muslims today, bowing down before secular norms, have constructed around them a human environment in which faith can only seem out of place, prayer superfluous and the *Shari'ah* an inconvenience. Men build according to their beliefs and what they build expresses these beliefs in brick or concrete. Western cities, like Western art in general, express in their own medium the agnosticism, the pride and the greed of their builders. When they are copied, as they are almost universally, by the Muslims, they bring with them their values - or lack of values - their worldliness and their emptiness. People who only a few years ago lived among things that were beautiful and entirely fitting to the Islamic way of life, now live amidst imported trash which they do not even recognise for what it is. The spiritual and psychological influence upon them of a human environment totally alien to Islam is all the more dangerous for being unperceived. At the same time, the natural world, filled with reminders of Allah for those who have eyes to see, is exploited and ruined so that there is no escape from this prison.

It is true that the spiritual man seeks to rise above nature, but in Islam nature itself is an aid to the ascent, for it reflects a higher reality, that same Reality towards which the spiritual man journeys. It is a 'reminder'; but I shall return to this matter of the 'signs' in the Book of Nature (which cry out for attention) later in this paper. For the moment, there is a different point I should like to make.

The Qur'an is an ocean, but human intelligence and understanding are strictly limited. As human creatures we are scarcely capable of encompassing all the facets of our religion and giving to each its correct weight. Only the Messenger of Allah (peace be upon him) could do that! It is inevitable that we did, in the past, emphasise certain aspects of the Faith according to our needs and neglect others. That is to be expected. But this indicates that there is still much of the

ocean unexplored. There are in the Qur'an, as also in the *Sunnah* (practice of the Prophet), elements which are not developed to their logical conclusions because circumstances did not require this. And yet, if I may replace the image of the ocean with a different one, both these sources might be compared to the rocks from which springs gush forth and from which new springs may yet gush forth when times demand this renewal.

Let me take an example which may not, in itself, be of crucial importance, but which may serve to illustrate what I mean. If we compare the three Monotheistic religions, the three 'Abrahamic' religions, we find little or no concern for the animal creation either in Judaism or Christianity, in fact the early and mediaeval Christians seem to have had only contempt for the animals, seeing them only as symbols of man's lower nature. The case of Islam is very different. For us, if we study the Qur'an and follow, so far as we can, the *Sunnah*, this animal creation and our obligations towards it assume great importance. There is a *hadith* (report) concerning a woman who was condemned for shutting up a cat and allowing it to starve to death, and of a prostitute who was pardoned for saving the life of a thirsty dog. Another concerns a prophet of earlier times who had an ants nest burned because an ant stung him and whose Lord reproached him saying: 'You have destroyed a community which praised Me!' The Qur'an informs us, regarding the other living creatures on this earth that they are 'communities like unto yourselves', and the bee and the ant are not neglected. We cannot doubt our responsibility towards the animal creation. Would I not be correct in suggesting that this is an obligation which has been much neglected by Muslims?

It must be said that, for us Muslims, obligations take precedence over rights, indeed our rights are conditional upon our carrying our obligations. The rebel against the Lord has lost all rights, since he no longer recognises any obligations, and it is precisely this rebel who today exploits and devours the things of this earth. Only Allah has absolute rights over His creation. Such rights as we may claim, are delegated to us and strictly limited in accordance with the needs that He has implanted in us, and, as creatures, we are ever in need. It goes without saying that the concept of man as a little god, self-sufficient and independent, deprives him of those delegated rights. The world of nature which, to the eyes of those who possess *Iman* (faith), sparkles

with light since it reminds them of Allah, would be dark were it unperceived by man, as the central being in creation, that is to say the point of communication between what is above and what is below.

Through being taught the 'Names' of everything, Adam (peace be upon him) and his descendants gained dominion over the animals, but only as the servant fulfilling towards them the wishes of Allah. Whereas, for the contemporary Westerner, economic progress is an end in itself, and the pseudo-religion of progress demands sacrifices: not only the animals, but the forests and the rivers and all the many riches with which this theatre has been endowed by its Creator.

There was a time when the spiritual life was thought of as the ascent of a mountain, but this was an interior ascent which might, perhaps, be inspired by the sight of an earthly mountain in its majestic splendour. That perception, that dimension, has been lost, hence the thirst to 'conquer' mountain peaks physically. A man is hailed as the 'conqueror' of Mount Everest; no one asks whether he has conquered himself, although that would be a far greater achievement. Again and again we find the modern world offering secular, material substitutes for things spiritual, or else the interpretation of spiritual principles is reduced to exclusively worldly terms. If you have not ambition to climb the inward mountain and if you cannot conquer your *nafs*, then what is the point of going out and conquering some rocky peak (simply because it is there)?

Today we see man no longer as *Khalifah*, caring for his sector of the earth, or as contemplator, learning from the earth how to rise above it; instead we have man as predator and exploiter, devouring this earth. His needs grow, they are never satisfied, and the more he consumes the more ravenous he is. There could be no clearer proof that man, when he is not kept within certain bounds, certain limits, becomes the destroyer of the natural environment upon which, none the less, he depends for his existence.

The loss of harmony between man and nature, the opposition set between them, is but an aspect of the loss of harmony between man and his Creator. Those who turn their backs upon their Creator can no longer be at home in creation; they might be compared to bacteria or viruses which ultimately destroy the body which they have invaded. Today man is no longer the custodian of nature. He is inevitably

alienated from it because, were he not alienated, he could not feel free to treat it merely as raw material for exploitation. This makes the human creature like a stranger in this world, not in the higher sense which led the Prophet (pbuh) to command the believer to be 'as a stranger in this world', but in the sense of one who comes as an enemy to the earth upon which he is born. Although I am speaking specifically of Western man, it may perhaps be acknowledged that Islamic man, now so much under the influence of the Western mind-set, is perilously close to following the same path.

What was it that made possible this view of the natural world, so different to that of all other peoples at other times? Consider for a moment the French philosopher Descartes. He emerged from the culture into which he had been born. It was, I believe, Christian dualism, which made such an absolute division between the spiritual and the material, that gave rise, after many centuries, to the secular conviction that the visible world is indeed a separate and hostile order of reality to the human one. From this it was a short step to regarding matter as the only reality. We hear a great deal about contemporary 'materialism' and the love of this world which has replaced the love of Allah. It might be more accurate to say that this is simply the wrong kind of materialism, the wrong kind of love. The Persian poet Sa'adi wrote:

I am joyous with the cosmos,  
For the cosmos receives its joy from Him  
I love the world  
For the world belongs to Him.

It is when we imagine that the world belongs to us, with absolute rights of ownership, that love of the world becomes a great evil.

The Prophet (pbuh) is reported to have prayed: 'Lord, increase me in wondering!' So we might pray for the opening of our eyes and, with them, our hearts so that we may marvel at the works of the Creator. For this we need to regain something of the child's vision of the world, before it is overcome by self-interest and stale habit. Should we not be astonished when we see the splendour of what Allah has made?

But let me return briefly to the dualism of Descartes' secular

philosophy, originating in the dualism inherent in Christian theology. For Descartes the whole of reality could be reduced to two poles, mind and matter, both cold, both lifeless, both cut off from the source of Light, which is also the source of wisdom and of all true understanding. It was on the basis of this dualism and the exclusion of Transcendence that modern science arose, that same science which so dazzles many Muslims that they become angry if one speaks of it critically.

It sometimes happens that I am invited to talk to student Islamic associations at British universities. I face audiences of good young people who are trying to be good Muslims. I can say to them much that is controversial, critical of today's Muslims and possibly hard for them to accept, but it is only if I cast some doubt upon modern science as an infallible source of truth and upon technology as an unqualified benefit that I face hostile questioning after my talk is done. I suppose that young people would say that this science belongs to the world as a whole, that it is value-free, presenting no threat to our Faith, and that we Muslims - had we not become slothful in the Middle Ages - would have developed the same science and brought it to perfection.

I think not! It seems to be inconceivable that the Muslims, left to their own devices and still true to themselves, could have pursued the same path. Modern science is rooted in the post-Christian West and in Cartesian dualism. For this science to function it must reduce everything there is to pure quantity, that is to say, to mathematical formulae. In doing so it inevitably excludes the greater part of reality. The scientific method, by its very nature, requires the exclusion from the mind of the scientist of any mental process that is not strictly rational and mathematical. How is it possible for any Muslim to accept this as a source of infallible truth?

Even the most ignorant among us knows that there is nothing that is independent of Allah, nothing that is self-subsistent. The moment we acknowledge the authority of Revelation, we have become 'unscientific'. The scientific method as such is immediately destroyed the moment we acknowledge even the possibility of Revelation as a source of knowledge. And yet - one will be asked - how is it that the material world falls in so neatly with the theories of the scientist and appears to confirm his conclusions? In Islam we can admit of no

absolute boundaries between one aspect of reality and another, since all reality derives from Allah and is dependent upon Him. There can therefore be no total separation between the scientific observer and what he observes.

Many writers have drawn attention to the great changes that have taken place in this century, particularly in the science of physics. Matter is no longer considered as something entirely knowable, and the previous absolute faith in mechanical laws has given way to a less rigid view of the physical universe. This is true of certain scientists at the very top of their profession, but their theories are so complex and so far beyond the understanding of the ordinary person that the rest of the scientific profession, including science teachers in schools, continues to think and speak in terms of pure materialism. For them, everything that exists is fully explained by science and that is the end of the matter.

I have a friend who works in London hospitals, although not as a doctor. She remarked to me once that, among the medical staff, the reaction to the fact that she is a religious person is always one of patronising tolerance. They are too polite to tell her that she is childish, but this is what they imply by their attitude. They imply that she believes in fairy tales. They still hold fast to a wholly mechanistic view of reality and still assume that science has eliminated God from the universe. The fact that quantum mechanics and the indeterminacy principle and all the ideas advanced by physicists in recent years have made their positions untenable has had no impact upon them. They might as well be living in the last century, in which that mechanistic interpretation was unquestioned. It is their influence which spreads far and wide through education and through the media.

Yet science still functions in terms of myths, usually described as theories or hypotheses. And the most powerful of these is the myth of evolution, as it is commonly understood. It accords so precisely with what the post-Christian world wants to believe, it satisfies the need for causality on the horizontal level, that is to say for a purely material causality. The fact that it is unproven has become irrelevant, yet it is this myth more than any other that has undermined religious faith in the West. Which came first: the myth or the abandonment of faith which it is thought to justify? That is like asking which came first, the

chicken or the egg!

It has also provided a further excuse for disregarding and despising what is assumed to be inferior. If man is the evolutionary crown of matter, then all lower forms, whether plant or animal, are like rungs of a ladder which can be kicked away or misused by the climber; so superior is he, that it would seem absurd for him to show respect or consideration for other forms of life. Before I leave this topic for more important considerations, there is one further point that needs to be made. Let us take the example of a clock. The scientist studies with great intellectual rigour the mechanism of the clock and the manner in which it functions; beyond that he goes on to study the atomic structure of its parts, and he displays an encyclopaedic knowledge of all that is contained in its casing. But can he tell the time? A clock exists only to tell the time. In short, our concern as human creatures is with the meaning of all things. Their structure and the precise manner of their functioning may be of interest, but it tells us nothing about their meaning.

Allah has informed us concerning the meaning of things by means of signs contained in two books, the Qur'an and the natural world. Words are the vocabulary of any particular language, and although they are our principal tool for communication and although this is the tool employed by Allah in the Qur'an, there are in truth other modes of communication. The 'signs' which are found in nature cannot be verbalised. It is impossible, when we are reminded of Allah by a particular natural phenomenon, to explain why this is an effective reminder or to say what precisely it tells us. That does not reduce its efficacy. People take communication between human creatures for granted, yet it is one of the great miracles, comparable on a lower level to the supreme miracle of communication between the transcendent Absolute and created beings who are incapable even of imagining His grandeur; hence, of course, the miracle of the Qur'an.

But, in the case of the Qur'an itself, the Revelation does not rest only in the words which you may look up in a dictionary (this is why no translation is adequate). I believe most of us would agree that there is a quality in the actual sound of the words, the music of the words, which also has its effect upon the human substance. The same may be true of the traditional scripts employed in the different *madhhabs*

(schools of Islamic law), which are not merely pleasing to the eye but by their beauty and by their rhythms, add a further dimension to the total Revelation.

The very sounds of nature may add to this universe of meaning. this flood of communication between the Creator and the creature who stands at the centre of His creation, man. I remember a certain Shaykh who was delivering a 'reminder' when thunder sounded, rolling on and on; he fell silent, and remained silent after the heavens had spoken. What could he have added to that? But we must be patient and very attentive to hear in the sounds of nature, that note of universal praise, the prayer that all creatures in the natural world raise to Allah. Have you not observed that when, during the dawn prayer or the remembrance of Allah, bird song reaches our ears, this does not disturb us, indeed it reinforces our remembrance? On the other hand, if we hear the sound of motorcars or machinery, these sounds do indeed interrupt our worship. The signs in the Book and the signs in the natural world and the signs within the human soul are all aspects of a single Revelation.

There is nothing in creation that does not praise Allah and glorify Him. This in itself is a reason for approaching all that surrounds us with respect. You do not interrupt a man at prayer, for he is praising his Creator. You should not disturb anything in nature, let alone destroy it, without a good cause, for it too is occupied in praise. What is a good cause? Our genuine needs - not our superfluous needs - so that we too can continue to praise and enjoy the gift of life which Allah has given us. But, in giving us these things, He has set bounds to our use of them and forbidden profligacy. On the one hand there is need, on the other greed - the 'greed for more and more'. If we are composed of need, as indeed we are, and if the foundation of our need is need for our Creator, the source of our being, and if the Creator is alone the final satisfier of needs - *al-Kafi* - then it is to be expected that, when man turns his back upon his Creator, he will be forever unsatisfied and, in still seeking satisfaction, will exceed all bounds. Until the development of technology as we know it, this may have harmed the perpetrator, but it did relatively little harm to the earth. Man's range has been extended immeasurably; that is why, today, we are the great destroyers.

Yet natural phenomena both veil and reveal their creator, as does everything that is other than Allah: 'Some He guides and some He leads astray'. He may both guide and lead astray by one and the same phenomenon; it is we who make it either a source of guidance or a source of error. Those who see the revelation in nature are guided; those who stop at the surface, sometimes a glittering and deceptive surface, may be misled.

We are required as Muslims to remember Allah constantly, or as much as we are able. To do so we need constant reminders in what surrounds us and what impinges upon our senses, and that is precisely why the 'signs' in nature are so important. Hardly less important are the 'signs' we encounter in the works of man. But which works? The works of devoted craftsmanship undertaken by men who themselves remember Allah constantly, not the objects which pour from the machines which have no touch of the human about them, and therefore no touch from the Divine. It is part of man's function, if he is among the rightly guided, to make things which are in themselves reminders, but today this is very rare and is becoming even rarer.

To neglect our duty towards the natural world is not only to harm ourselves and perhaps, in the long run, imperil human life itself, but it is a betrayal of the Trust which we accepted when we bore witness to the Lordship of Allah in our primordial covenant. And, in being faithful to that Trust, we are also protecting and furthering our own interests during our worldly existence and that of our descendants.

I have already suggested that our environment may be perceived and understood at different levels, both revealing and veiling Reality. The veils are thick, as they must be if we are to live our lives in this world. We know that, were these veils to be completely removed, this world would no longer exist. But what is it that lies behind these coverings, could we but see it? What is our real 'environment', as against what we perceive with our poor senses and about which we conjecture in our poor minds? Allah has named Himself *al-Muhit*, the All-Encompassing. In accordance with the *hadith* concerning prayer - 'Though you see Him not, yet He sees you' - we live always in the Divine Presence. If we knew this fully and plainly in our everyday experience, we would not be here; we would be totally and finally with Allah. Our relative blindness is from His Mercy, so that we may

experience existence. But we have none the less to remember and take note of our real situation in every decision and in every action. 'Whithersoever you turn, there is the Face of Allah.' To keep this ever in mind is the key to all good, for no sane person could do wrong in that Presence. How better can we show respect for that unseen Presence than by showing respect towards that which veils Him?

True humility, true *faqr*, awareness of our poverty before our Creator, is not so much a matter of thinking ill of ourselves or of exaggerating our own unworthiness, as it is of seeing our own situation objectively, and, seen objectively, it is a situation of total dependence. Therefore humility is neither more nor less than realism. We are constantly reminded of our dependence upon Allah by the very fact that, in our bodily existence, we are dependent upon food and drink and all other gifts that He has provided for our benefit. We are not the 'conquerors' of anything on earth. He alone is the Conqueror. To act with humility under all circumstances is to act as we would hope to do in the very presence of our Creator although, during the short time that we are here, we do not see Him.

This, too, expresses the true *iman*, and we would bear in mind that the root of the Arabic word has a sense of 'peace' and 'safety'. I have heard this compared to the condition of one who, in his heart, dwells in the ocean, far below the turbulent waves, where all is calm. And although he acts, as he must, on the surface, amongst the waves and in the midst of the storm, yet the possessor of *iman* never loses his awareness of the still depths, his awareness of ultimate safety. And yet that safety, that peace, is also all around us, if we have eyes to see and ears to hear with; then inward peace and outward peace are united as, behind every veil, the principle of *tawhid* unites all things in the presence of Allah.

## PART TWO

### DETAILED STUDIES

## ISLAM AND THE ENVIRONMENT: A FRAMEWORK FOR ENQUIRY

Yasin Dutton

Among world religions, Islam has a unique and little understood perspective on the question of man's relationship to the environment. Not only does it offer a clear moral position, but also, unlike many other religious traditions, it offers practical solutions to the broader questions arising from the political, economic and legal dimensions of environmental issues.

Islam is traditionally divided into three categories: beliefs ('*aqa'id*), legal judgements (*fiqh*), and personal spiritual development (*tasawwuf*). The first, commonly known in the West as 'Islamic theology', includes the major ethical considerations of man's position in the universe *vis-à-vis* both the Creator and creation. The second, although often referred to as 'Islamic law', is in fact about putting the premises of the first category into practice in an outward, social sense and is thus about action rather than ideas. The third, which sometimes goes by the somewhat misleading name of 'Islamic mysticism', or the hardly better understood term 'Sufism', is also about action, but action applied inwardly on the self, rather than in the outward realm of the people and society around one. Each of these areas of human thought and activity has a profound bearing on how man treats the environment and, consequently, any complete discussion of environmental issues must necessarily take into account all three. It is here that Islam, having developed a highly sophisticated science out of each category, is of particular interest. Not only is it of importance in its own right as the ethical and legal code of a large portion of mankind, but, since its principles and precepts cover politics and economics as much as personal ethics and religion, Islam is in an ideal position to contribute to the current environmental debate and offer practical solutions to the environmental problems of our time, whether the specifically religious and ethical problems of individuals, or the

larger political and economic problems of society.

In this article we briefly consider the environmental crisis of our time from these three points of view. Such a framework of enquiry not only constitutes an Islamic critique of the present situation, but also highlights the unique contribution that Islam has to offer by way of solutions to this crisis.

### The Ethical Perspective

From a Qur'anic point of view, the current environmental crisis must be seen as the direct result of men's activities. The Qur'an declares: '*Corruption has appeared on the land and sea because of what men's hands have done*' (Q 30: 41). The solution, therefore, is in changing people's behaviour. As it says in the Qur'an: '*Allah does not change what is with a people until they change what is in themselves*' (13: 11). Indeed, the whole purpose of life and death is as a test to see who is best in action: '[He is] the one who created life and death to test you which of you is best in action' (67: 2). It has also come down to us in the *hadith* that the Prophet, may Allah bless him and grant him peace, said: 'This world is a green and pleasant thing. Allah has left you in charge of it (*mustakhlifukum fi-ha*) and looks at how you behave.'<sup>23</sup> Man is therefore in charge - he is Allah's caliph (*khalifah*) on the earth<sup>24</sup> - but he is also responsible for what he does by virtue of this deputation.

The issue is thus one of action and behaviour, and behind every action there is an ethic. The ethical position of Islam as it relates to the environment is simple enough to understand. Allah has created the earth and everything that is on it 'for' man.<sup>25</sup> That is, he may use it as he pleases, but with the understanding that he is responsible for what he does, that he is being watched and tested, and that he will be rewarded or punished accordingly. This 'for' is reiterated again and again throughout the Qur'an. Thus, in *Surat an-Nahl* (16), for instance, we read how cattle and other domestic animals have been created for man, how they provide him with food from their flesh and milk, and clothing from their hides and hair, as well as being a means of transport for him and his goods, and also simply a pleasure to look at (5-7, 80); how horses, mules and donkeys have been created for riding and as an object of beauty (v. 8); how the rain is sent down as

a source of water for man to drink and for plants to be able to grow and in turn provide him and his animals with food (10:11). The night, the day, the sun, the moon, the stars and the sea have all been subjugated for man's benefit (12, 14). From the sea, man gets fish for food, and coral and pearls for wearing as ornaments (14); and by the stars he guides himself (16). In other *surahs* we read that the sun and the moon provide man with light and a means of reckoning time (10:5), while the night and the day allow him to divide his time between rest and activity (see Q 10: 67; 25: 47; 28: 73; 40: 61; 78: 9-11). There are many other examples.

However, although everything in creation is 'for' man, it is also there as a sign for man to reflect on the power of Allah and to give thanks for His generosity. As Allah says: '*Surely in the following of night and day and [in] what Allah has created in the heavens and the earth are signs for a people who fear [Him]*' (10: 6); and, also: '*He is the one who makes night and day follow one another, for whoever wishes to remember or wishes to give thanks*' (25: 62).

It is this twin recognition - of the vast power of Allah manifest in His creation, and of His vast generosity towards that creation - that leads to, and forms the basis of, man as worshipper,<sup>26</sup> and, according to the Qur'an, worship is the basic function of the human being on this earth. Allah says: '*I only created jinn and men for them to worship Me*' (51: 56). The most obvious form of worship in Islam is that of prostrating to Allah five times a day in the act known as 'the prayer' (*as-salah*), but in Islam every act of obedience to Allah is an act of worship. Thus, to worship Allah means to obey Allah in all His commands and prohibitions, which, together with the more detailed judgements derived from them, form the stuff of Islamic law, or *fiqh*.

### The Islamic Legal Standpoint

From an Islamic legal standpoint, the question of how to use the environment is ultimately one of rights to, and uses of, natural resources. It is therefore primarily an economic issue, although, as noted above, there is an implicit ethical stance behind it. We should also add that the correct utilisation of resources according to the *shari'ah* is only possible within a functioning political framework. There are numerous detailed judgements that relate to natural

resources in Islam. These can be found in any detailed book of *fiqh* in the sections dealing with hunting, agriculture, animal husbandry, land and water rights, etc, not to mention the general chapters on business transactions.<sup>27</sup> Here we need only highlight a few of the more important judgements:

i) Traditional Islamic law divides land into two main categories, '*imir*' ('developed') and '*mawat*' ('undeveloped'). '*Imir*' lands may be broadly subdivided into settlements and agricultural lands, while '*mawat*' lands subdivide into what could be termed rough grazing lands and virgin wilderness. This gives us four categories altogether: settlements, agricultural lands, grazing lands and wilderness. The first three reflect the three main types of human activity - trade, agriculture and pastoralism - while the last reflects the effective absence of any such activity.

Land, especially when undeveloped, may be the general property of the community; it may also, especially when developed, be the private property of an individual. There is, therefore, no concept in Islam of everybody having a general right to the countryside; nor, on the other hand, can all the land be sequestered by particular individuals. Rather, each 'development', whether settlement, agricultural area, well or canal, etc, has its associated *harim*, or protective zone, which must remain free to be accessed by all those with a right to the 'development', which includes, for example, the area around a village which the villagers need for collecting firewood and pasturing their animals. It is also the case that undeveloped land may be set aside permanently by the community for the community as a *hima*, or reserve, in order to preserve its special function as, for example, grazing land.

ii) Water, pasture and fire-wood are the common right of everyone where these resources occur naturally on unowned, undeveloped land, on the basis of the words of the Prophet, may Allah bless him and grant him peace: 'The Muslims are partners in three things: water, pasture and fire'.<sup>28</sup> If, however, it is private land, there is no such general right.

iii) Domestic animals such as camels, cattle, sheep and goats may be killed for food, as long as they are slaughtered in a manner that is acceptable by the *shari'ah*, which includes mentioning the name of

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a source of water for man to drink and for plants to be able to grow and in turn provide him and his animals with food (10:11). The night, the day, the sun, the moon, the stars and the sea have all been subjugated for man's benefit (12, 14). From the sea, man gets fish for food, and coral and pearls for wearing as ornaments (14); and by the stars he guides himself (16). In other *surahs* we read that the sun and the moon provide man with light and a means of reckoning time (10: 5), while the night and the day allow him to divide his time between rest and activity (see Q 10: 67; 25: 47; 28: 73; 40: 61; 78: 9-11). There are many other examples.

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Allah when doing the slaughtering, making sure that the implement used is sharp (it is not to be sharpened in front of the animal) and that the slaughtering is done quickly and efficiently and not in the presence of other animals, etc.<sup>29</sup> The hunting and killing of game animals and birds for food is also permitted (although again with certain restrictions as to method), as is the killing of pests. Vegetarianism is not, therefore, a normal Muslim position. Rather, animals - and domestic animals in particular - have been created for man as a source of food as much as for anything else, as noted in the reference to *Surat an-Nahl* above.

Needless to say, animals in general are to be treated with due respect and without cruelty. As the Prophet, may Allah bless him and grant him peace, said: 'There is a reward in every moist liver [i.e. in treating every living animal kindly].'<sup>30</sup> Even a pest is better killed with only one blow rather than many.<sup>31</sup>

iv) Any activity that is in itself permissible may be carried out as long as it does not cause harm to others. Here the main principle is the famous maxim of the Prophet, may Allah bless him and grant him peace: '[There should be] no harm or reciprocating harm (*la darara wa-la dirar*).'<sup>32</sup> This automatically outlaws any activity that infringes on the rights of others, such as polluting another's water source, or diverting water away from another's land, or building where it obstructs access to another's land or house, etc.

However, there are two judgements of major importance in the *shari'ah* which have an immense bearing on the environmental issue and yet which have received very little attention from researchers on the subject. These two judgements are the command to pay *zakah* and the prohibition against usury (*riba*). We shall briefly consider each in turn and then look at the implications of both on the environment.

### Zakah

*Zakah*, or obligatory alms-giving, is one of the Five Pillars of Islam and thus an essential part of it. (The other four are: declaring that Allah is One and that Muhammad is His Prophet, doing the five daily prayers, fasting the month of Ramadan each year, and going on *hajj* to Makkah at least once in a lifetime if possible). *Zakah* is a tax on

personal wealth that is paid on, or, more properly, taken from, the three main items of human economic activity, namely, crops, livestock and money.

*Zakah* on crops applies to all grains, seeds and pulses that can be considered both staples (*muqtat*) and storable (*muddakhar*),<sup>33</sup> e.g. wheat, barley, rice, sesame seeds, lentils, chickpeas, etc. It also applies to dried dates, raisins and olives. It is taken from such crops at a rate of one-tenth per harvest if the land has been naturally watered, and one-twentieth if it has been irrigated, provided that the harvest comes to at least five *wasqs*, which amounts to approximately 640 kilos of grain in weight.<sup>34</sup> (This minimum amount, below which *zakah* is not deductible, is known as the *nisab*.)

*Zakah* on livestock applies to camels, cattle, sheep and goats and is taken, on a yearly basis, at varying rates according to the number and type of animals concerned, beginning with one sheep for 5-9 camels, one young cow for 30-39 cattle, one sheep for 40-120 sheep, etc. On numbers less than these no *zakah* is due.

*Zakah* on money (meaning, traditionally, gold and/or silver) is taken at a rate of 2½% on money that has remained unused for a whole year, provided that it reaches a minimum (i.e. the *nisab*) of twenty *dinars* in the case of gold, which is equivalent to 85 gms, worth about £735 [\$1104 at current prices (January 1996)] or, in the case of silver, five *iqiyas*, or 200 *dirhams*, which is equivalent to 594 gms, which is worth about £70 (\$105) at current [January 1996] prices.<sup>35</sup>

The three types of *zakah* thus correspond broadly with the three major types of land-use: crops for the farmers; livestock for the pastoralists; and money for the traders of the cities.

*Zakah*, the Third Pillar of Islam, is mentioned on numerous occasions in the Qur'an in direct conjunction with the Second Pillar of Islam, the prayer, such as the frequently recurring command to: 'Establish the prayer and pay the *zakah*' (2: 43, etc). The seriousness of the obligation to pay *zakah* is indicated by the fact that it can, in certain circumstances, be collected by force, even if that leads to war. (There are, of course, clear conditions for fighting any war in Islam). In fact, the first war to be fought in Islam after the death of the Prophet, may Allah bless him and grant him peace, was the war fought by Abu Bakr against the tribes who refused to pay the *zakah* (even

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though they still accepted the obligation to do the prayer), claiming that they only owed it to the person of the Prophet, may Allah bless him and grant him peace. Abu Bakr's famous comment was, 'By Allah, I will fight anyone who makes a separation between the prayer and *zakah*', at which point the other Companions accepted his judgement.<sup>36</sup> This incident alone highlights the fact that *zakah* is not a private matter. On the contrary, it is to be collected by public officials who are to be appointed by the *amir* ('leader') of the community, who is then responsible for its equitable distribution. The economic institution of *zakah* thus presupposes the political institution of amirate both for its execution and its enforcement: economics and politics necessarily go hand in hand.

**Usury (*riba*)**

The second main judgement with major implications for the environment is the prohibition against usury (*riba*). Usury is traditionally defined as 'Any increase for which there is no recompense',<sup>37</sup> meaning, as Umar Vadillo paraphrases it, 'Any unjustified increment between the value of the goods given and the countervalue of the goods received'.<sup>38</sup> (We must remember, of course, that *real* money, such as gold and silver, are commodities with their own market value which can be, and are, bought and sold in their own right.) In simple terms *riba* can be understood as lending money at interest, including any transaction in which money, or what acts as money, is effectively bought for time.

The seriousness of the prohibition against usury is indicated by the verses where it is mentioned in the Qur'an:

*Those who eat usury will not rise up (i.e. out of their graves) except as one who has been made mad by Satan. That is because they said that trade is like usury, whereas Allah has permitted trade and forbidden usury ...*

*Allah wipes out usury and makes charity grow, and Allah does not love every unbelieving wrong-doer.*

*Those who believe and act correctly, who establish the prayer and pay the zakah, will have their reward with*

*their Lord. There will be no fear on them, nor will they be sad.*

*O you who believe, have fear of Allah and leave what remains of usury if you are truly believers; if you do not, then be informed of a war from Allah and His Messenger. If you repent, you will have your capital, without you either wronging or being wronged.*

(2: 275-9)

It is thus an extremely strong prohibition, with the severity of the crime indicated by the severity of the punishment. It is *war* from Allah and His Messenger. Indeed, as a crime it is much worse than illicit sexual intercourse (*zina*), as indicated by the *hadith* that *riba* consists of seventy wrong actions, the least of which is like that of a man having intercourse with his mother.<sup>39</sup>

The commentators distinguish three categories of people with regard to this judgement:

1. Those who take *riba*, considering it permissible (i.e. they reject the authority of the prohibition itself). They are considered *kafir* ('unbelievers') and the *imam* ('leader') deals with them as he would with apostates, i.e. they are fought, as Abu Bakr did with the tribes who refused to pay *zakah*.
2. Those who accept that it is *haram* ('forbidden'), but refuse to accept the *imam*'s jurisdiction over them. They are fought until they repent, like rebels (*al-fi'a al-baghiya*).
3. Those who accept that it is *haram* and accept the jurisdiction of the *imam*. They should be deterred by discretionary punishment, such as beating and/or imprisonment.<sup>40</sup>

As regards Jews and Christians living under Muslim governance, practising *riba* is one of the things which breaks the contract of protection (*dhimma*) between them and the Muslims. It is related that the Prophet, may Allah bless him and grant him peace, wrote to the people of Najran, who were Christians living under the *dhimma* of the Muslims, saying, 'Either give up *riba* or be informed of a war from Allah and His Messenger.' In another transmission, it says that when the Messenger of Allah, may Allah bless him and grant him peace,

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made his treaty with the people of Najran, the end of the document said, 'Do not take *riba*. If anyone does so, my protection no longer applies to him (*dhimmati minhu bari'a*).'<sup>41</sup>

### Usury and the Environment

How then do these judgements apply to the modern world and the environmental issues of our time?

What we see nowadays is the workings-out of an economy based on usury. Everything, as the Prophetic *hadith* has it, is now 'touched by usury'.<sup>42</sup> And, because usury is forbidden, it brings with it trouble, because from the Muslim point of view, every permitted act brings with it a blessing from the Divine, while every prohibited act brings with it the opposite. And with usury so prevalent, it is not surprising that there is such an extent of degradation and despoliation associated with it today.

In order to understand the effects of usury, it is necessary to understand a little about the nature and history of money, especially paper money. Most people imagine that money exists as coins and/or paper representing coins (the English pound has the phrase 'I promise to pay the bearer on demand the sum of *x* pounds' printed on the front), issued by the government of a particular country and serving as 'legal tender' in that country. What most people do not realise is that the vast majority of what acts as money in the world is not in the form of coins, or even paper representing coins, but rather in the form of bank deposits in the account books of the banks.<sup>43</sup> What is even less understood is that the vast majority of these deposits do not represent any solid money - that is, they are not backed by gold or anything else - but have only been created as purely fictitious loans in favour of the banking systems of the world, which, as one writer succinctly put it in 1926, '[are] imagined to exist for the sole purpose of charging interest on [them].'<sup>44</sup> That this claim is not exaggerated will be seen if we examine the process whereby credit is issued and money thereby created, which is, as J.K. Galbraith says, 'so simple that the mind is repelled'.<sup>45</sup> We might also mention the words of William Paterson, the founder of the (private) Bank of England, when he addressed his prospective shareholders in 1694: 'The bank hath profit on the interest of all the moneys which it creates out of

nothing.'<sup>46</sup>

How, then, is credit issued and money thereby created 'out of nothing'? The following description is from a standard 'A' level economics textbook in use throughout schools today:

### The Banking System and the Creation of Money

The banking system has the power to create money. Its power to do this is rooted in the fact that all bank depositors are unlikely to want to withdraw all their money at the same time.

Consider an economy with only one bank operating. Customers have deposited £100 million in the bank and it is going to make a profit by lending out that money to its customers. Not all of the £100 million will be lent out. From experience, the bank knows that its depositors will from time to time withdraw some of the deposits and expect cash. Over long years the bank in our economy has come to know just what proportion it needs to cope with even unexpected withdrawals. Let us assume that it needs to keep £1 in cash for every £10 of deposits. Hence it can lend out £90 million of the £100 million originally deposited, keeping £10 million in cash. That £90 million in cash is unlikely to remain for long in the real economy. It will turn up as new deposits in the banking system, placed by customers who have received money from the original borrowers. Hence the bank can now lend out another 90% of £90 million, keeping £9 million in cash to cover possible cash withdrawals. That £81 million lent out will also reappear as new deposits in the banking system. Ninety per cent of that will be lent out, and this process carries on until the sums are too small to be worth mentioning. If all the money deposited is added up (£100 million + £90 million + £81 million + ...) it will come to £1,000 million. The bank will have all of the original £100 million of cash (£10 million + £9 million + £8.1 million + ...) but what will be

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supporting another £900 million of book entry money? It will owe £1,000 million to its customers who have deposited money. To balance that, it will have £100 million in cash and £900 million owing to it in the form of loans.<sup>47</sup>

Now if, for the sake of argument, we assume a (conservative) annual interest rate of 5% on these loans, then in the course of one year the bank will have made £45 million out of other people's money effectively deposited with them for safekeeping! If we add to that the general banking charges that these and the original customers may be paying for the privilege of participating in this system, the simple truth emerges that whatever the original sum deposited, the bank can, from interest and other charges, make almost half as much again in any one year. If we further bear in mind that the cash ratio of 1:10 is, in fact, more like 1:50 or 1:100 (i.e. the banks only need to keep between 1 and 2% of their deposits in the form of cash (see above); and that interest on these loans can often be a lot higher than 5%, then one can hardly be blamed for being surprised at both the simplicity and outrageousness of the whole operation - which, as we noted Galbraith as saying, is 'so simple that the mind is repelled'. Our text-book quickly tries to offset any such qualms:

The creation of money by banks is always considered quite extraordinary to those meeting it for the first time. This is partly because they wrongly assume that anybody who can create money will become rich very quickly. The banks' creation of money is not at all like that. The money they create does not belong to them, although they do get extra customers as a result.

The money belongs to the customers of the banks.<sup>48</sup>

Elsewhere, the same author says:

This money [that has been created] does not belong to the bank. It belongs to customers. But the bank is happy to help create this money for its customers because it can make a profit by lending it out at higher rates of interest than it borrows it for.<sup>49</sup>

Now it may be true that the bank does not own this money - (one wonders if anything so fictitious can be owned) - but it certainly

controls it, which must be the next best thing. What is certainly true is that this created money does not belong to the customers. They are only borrowing it, at the bank's convenience. And not only do they have to pay interest for the privilege of borrowing it, but, if they default on their payments, the bank will take something else instead - perhaps their house, or their land, or their business for example.

These moneylending principles, which began in earnest with the relaxation of the strictures against usury in the time of John Calvin and the European 'Reformation'<sup>50</sup> have now been extended to the exclusion of all other means of creating money so that the banks now own 98% of the money in and out of circulation, while all new money comes into existence as an interest-bearing loan in their favour.<sup>51</sup> Thus the banks are not simply offices for borrowing and lending money. They are manufactories of credit - and one man's credit means another man's debt, and the control of the second by the first. The implications are momentous. As Jeffery Mark remarked as long ago as 1934:

Of the absolute authority of Finance today there can be no question. To those who still cling to an illusion that politicians, bishops, military authorities, judges and educators, or some combination of any two, three, four or all five of them, have the fate of nations and the world in their hands, it should be unnecessary to submit evidence to the contrary ...

Seeing that all things are produced through the agency of money, and that all money now comes into existence as a debt to the banking systems of the world, this simply means ... that our now internationally organised moneylenders 'are the actual or potential owners of everything produced in the world.'<sup>52</sup>

Sixty years later, Sir Fred Atkinson, a former Government Chief Economic Adviser (1977-79) who spent most of his life advising governments of both parties on economic policy and saw at first hand how in reality national governments no longer control the levers of economic - and thus national - policy, had this to say on a recent British television programme:

A national government has very little control, because

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it needs the approval, so to speak, of world financial centres, otherwise the money will be taken out and the exchange rate will fall. So it has to play the game according to the opinions of international banks, you might say, which means that it has to have its interest rates at what the world thinks is a correct level for a country in that position. It has to keep its budget within limits that people think are reasonable. So it is under a discipline not from an international authority but from all the money-men of the world, all the banks in the world.

[Narrator:] In 1994 the long-term future of Kenneth Clarke, [the Chancellor] was the source of some speculation. But if ever he was to be replaced by Gordon Brown [the Shadow Chancellor], the international bankers would still be in charge.

[Sir Fred Atkinson:] Once they start getting worried, he's in a fix. But as long as he keeps them happy, they'll allow him to do a few, sort of socialistic things or, you know, put a bit more into the Health Service or what-not. He won't have to follow the Conservative prescription exactly, but he'll have to behave in what they would consider a reasonable manner - which he probably fully intends to do.

[Narrator:] This is the reality of the forces of global integration. A national politician has about as much power in the world economy as a village has in a national economy. 1994 was the year in which one of President Clinton's advisers said that if he believed in reincarnation, he would come back not as the President or the Pope, but as the world bond-markets. As he said, 'You can intimidate anybody.'<sup>53</sup>

The point is that this created money gives power to those who create it. They can not only dictate policies to their debtors, but, if those indebted to them are unable to pay up, they take ownership of real, tangible wealth - land, houses, mineral resources, etc. It is this single fact which has such devastating consequences for the environment, for

the creation of credit - which means the creation of debt - is the prime cause of the destruction of the environment that we see around us. As an article by Eugene Linden in *Time* magazine put it, reporting on the Environment Conference held in Boulder, Colorado, USA, in 1988:

Why are so many species and environments threatened? The main reason is that throughout the tropics, developing nations are struggling to feed their peoples and raise cash to make payments on international debts.<sup>54</sup>

The situation is much better understood when we realise that in the previous year (1987) a much less publicised conference on Third World debt was convened by the International Monetary Fund at which 27 senior officials from the leading banks of the world met privately to discuss their future policy in Africa. There, they declared their express intention to extract \$26 billion from sub-Saharan Africa by 1995 in settlement of debt but to inject only \$4 billion.<sup>55</sup> The net result, therefore, would be that rather than receiving any aid, \$22 billion would in fact be taken out of the area, thus forcing the local people into worse and worse impoverishment, debt and starvation. Under such pressure it is not surprising that there is abuse of the environment: something has to give.

But it is not just the debtors who are under pressure. The bankers themselves are under pressure - from their own money. For not only must they gain interest for themselves, they must also pay out interest on their depositors' accounts. It is therefore imperative that their money does not lie 'idle' but is kept moving, which means lending it out to as many people and for as many projects as can safely be done. As our economics textbook puts it:

Advances are the single most important asset of banks. Advances earn banks the highest rate of interest and therefore they try to maximise the level of advances subject to constraints of liquidity and prudence.<sup>56</sup>

Bankers are thus concerned primarily with the monetary return on their loans, which means that they are concerned with those projects which will, or are likely to, bring in both the largest and the quickest return. Furthermore, with the ever increasing amount of 'credit' (= debt) in circulation because of the banking system, it is obvious that

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there will be a growing need for ever larger (or more numerous) projects for which to loan money to gain interest. Thus it is that we see, in every country of the world, a concern on the part of the international financiers and monetary agencies not with the genuine welfare and development of the country in question, but with their own particular gain, regardless of the human cost. For just as massive projects need massive amounts of money, so too do massive amounts of money need massive projects, and, if they do not exist, they have to be created. Hence the whole myth of development.

Examples abound. The French nuclear power programme, one of the largest and most subsidised in the world, was recently undergoing severe financial problems, for the simple reason that nuclear power is so capital intensive that they had built up huge debts which they were under pressure to pay off. One part of the French programme was to build a series of newer, larger, reactors, and in doing so it had amassed a debt of more than \$40 billion. Another side was to sell reactors. There was, however, a major collapse in the market for reactors which, as an article in the *Financial Times* put it, left behind 'a vast surplus of the most expensive source of large-scale power generation money can buy.' The article went on to discuss possible solutions to this problem, saying that the situation could be ameliorated a little by exports but that they would never be more than a partial solution. The real solution, it said, lay in 'boosting electricity demand.'<sup>57</sup>

Near Crested Butte in Colorado, USA, the AMAX metal company was hoping to extract some of the world's largest molybdenum deposits which would result in the ruin of one of the country's finest areas of natural beauty. This might conceivably have been justifiable if there were a genuine need of molybdenum. One finds, however, that the company was already running at least three other mines to produce this metal, and, moreover, had actually set up a separate department purely in order to find new uses for it!<sup>58</sup> In other words, they had enough already, but it was worth the cost of setting up a new department so they could maximise the resources to which they had access, regardless of the cost in habitat destruction and social disruption that such a project would entail.

Another classic example of the workings of the present usurious

economy is the whaling industry. It might seem odd to most people that an industry based on whales should want to use up all the whales and thus put itself out of business; but this, in effect, is precisely what it has done. What has to be understood is that in the present economic climate the whaling industry has no interest in the whales themselves; it is interested in maintaining its stream of income. In economic terms, the value of the whale resource could be maximised, from the point of view of the interests of an individual whaling company or nation, by driving it to economic extinction. That is, the best economic strategy would be to continue hunting the declining whale species until catches were no longer large enough to be profitable. Then the depreciated chasers and factory ships could be converted to other uses or sold for scrap, and the capital of the industry applied to the exploitation of some other resource.<sup>59</sup> As the Ehrlichs say in their discussion of the AMAX example referred to above:

Like the whalers and the other large corporations that specialise in exploiting natural resources, the miners have only one goal - maximising their income stream. They are in essence huge agglomerations of capital moving over the face of the planet, pausing for a decade or five to devour a resource, and then moving on to devour another, leaving devastation behind them.<sup>60</sup>

It is the same with the rainforests, beef-production in South America, etc. The main consideration for those with money, whether banks or corporations or borrowers, is to keep it on the move and maximise the flow to keep up with the 'cost' of money, i.e. interest rates. At this pressure, ecological balance is a luxury that nobody can afford. The system, as we have pointed out above, demands despoliation, for there is no way that the growth rate of natural resources can keep up with the unnatural growth of interest rates. How can 2½% (the growth rate of the whales), or even 5 or 7%, keep up with 10%, or 15, 20, 25, 30% etc? How can a wheat field already at maximum production level produce more in order to give the farmer that little extra surplus so that he can begin (perhaps) to pay off his debts and the interest accruing on them?

The unique contribution of the Muslims to the current environmental debate lies in this all-important critique of the

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economy. Pound identified two main dangers to any economy, inflation and stagnation.<sup>61</sup> The direct causal link between usury and inflation is amply clear from the above description of credit creation: the more 'money' there is in circulation to pay for the same amount of goods - as is inevitable under the present system - the more the price must go up for the money available to buy the goods.<sup>62</sup> Abolishing usury - which is what the Muslims are called upon to bring about - would thus mean abolishing inflation.

On the subject of stagnation, Pound referred to the 'stamp scrip' system of the great monetary reformer, Silvio Gesell, which had proved so successful in reviving the economies of the Bavarian village of Schwanenkirchen and the small Tyrolean town of Wörgl in the early 1930's until both experiments were stopped by the banks.<sup>63</sup> As Pound explains, Gesell saw the danger of money being hoarded and proposed to deal with it by the issue of a 'stamp scrip', which was to be a government note requiring the bearer to affix a stamp worth up to 1% of its face value on the first day of every month; if the note did not carry its proper complement of monthly stamps it would not be valid. Gesell's type of tax, he points out, could only fall on someone who had, in his pocket, at the moment the tax fell due, 100 times, at least, the amount of the tax, rather than on those too poor to pay. He goes on to say:

Gesell's kind of money provides a medium and a measure of exchange which cannot be hoarded with impunity. It will always keep moving. Bankers could NOT lock it up in their cellars and charge the public for letting it out. It has also the additional benefit of placing sellers of perishable goods at less of a disadvantage in negotiating with owners of theoretically imperishable money.<sup>64</sup>

The 'stamp scrip' of the Muslims is, quite simply, *zakah*, which only falls due on what a person has at the time he has it, provided it is above the level of the relevant *nisab* and that he has had it for over a year.

Al-Qurtubi (d. 671/1273), in his commentary on the Qur'anic verse '*Obey Allah and obey the Prophet and those in command (uli l-amr) among you*' (Q 4: 89), notes that Sahl ibn 'Abdallah at-Tustari (d.

283/986) said that obeying 'those in command' means obeying the political leadership in seven things: their minting of gold and silver coins, their fixing of weights and measures, their legal decisions, and their leadership of the pilgrimage (*hajj*), the Friday prayer (*jumu'a*), the 'id prayers and war (*jihad*).<sup>65</sup> Establishing just economic conditions is thus one of their prime functions.

Thus, to take but one historical example, in the fifth century AH/11th century CE, when the strictly orthodox Almoravids (*al-Murabitun*) moved north out of the Sahara to conquer Morocco and later Spain, and re-establish a pure Islam, one of their first actions was to upgrade the coinage by issuing *dinars* of high quality gold. These ushered in an era of prosperity and remained famous throughout Europe as 'maraboutini' long after the demise of the dynasty itself.<sup>66</sup> The importance the Almoravids attached to *zakah* within the Muslim economy is emphasised by the fact that Abu Bakr ibn 'Umar, their ruler at this time, fought those who refused to pay the *zakah*, while his governor in Sijilmasa (in southern Morocco), Yusuf ibn Tashfin (who was later to become ruler of the whole of their territory from Spain to the southern Sahara), is praised by historians for his application of orthodox Islamic law and his 'only having taken *zakah*' from the people under his authority.<sup>67</sup> We have already seen how the first war in Islam after the death of the Prophet, may Allah bless him and grant him peace, was the caliph Abu Bakr's war against those who refused to pay the *zakah* (see above).

Environmental management is thus first and foremost an economic issue, behind which lies an ethical standpoint. The basic ethical standpoint of the Muslims is belief in Allah and acceptance of His laws, which include economic laws.

The primary economic obligation in Islam is to pay *zakah*, while the primary economic prohibition is to avoid any kind of *riba* (which must include, as we have noted above, paper-money and its electronic 'derivatives'). Neither of these are possible, however, without amirate, that is, the political authority of an *amir* with a group who accept his leadership and who, together, can put these judgements into practice.

Environmental management is thus not so much a question of managing the land, as managing the people who manage the land, and

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Environmental management is thus not so much a question of managing the land, as managing the people who manage the land, and

part of the managing of people must be their managing themselves, and their wanting to manage themselves. Thus we return to the quotation from the Qur'an which we cited at the beginning: '*Allah does not change what is with a people until they change what is in themselves*' (13:11; see above). This is the third element, of personal spiritual development, that we spoke about in the introduction to this article. All that we shall say here on this topic is that from a Muslim point of view the inward and the outward cannot be separated and that without an outward application of the *Shari'ah*, genuine spiritual development is not possible.

## THE FLIGHT OF TIME, ECOLOGY AND ISLAM

by

Ilyas Baker

*No calamity can ever befall the earth, and neither your own selves, unless it be [laid down] in Our Decree before We bring it into being.*

(*Qur'an* 57:22)

Most predictions of the state of the planet at the end of the twentieth century are a depressing catalogue of the human race's continued failure to achieve social or ecological justice. Essentially, their message is that we must curb population growth and cut back on profligate resource use or the planet will, for a vast number of people, be a horrific place in which to live.<sup>68</sup> What are some of the conditions that might have to be endured?

- The world population will reach 6.35 billion in 2000; the fertility of agricultural land will be destroyed at an accelerated rate;
- per capita food consumption in the poorer countries of the world will remain insufficient or will perhaps decline and the material gap between rich and poor nations will increase;
- forty per cent of the world's remaining forests will have disappeared by the end of the century and approximately twenty per cent of species on Earth are likely to become extinct due to habitat loss;
- global environmental degradation will increase as a result of carbon dioxide build-up, ozone depletion, the spread of hazardous wastes and increased acid rain precipitation; and regional water shortages will become more serious as a result of population pressures and deforestation.<sup>69</sup>

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The likelihood,<sup>70</sup> therefore, of massive damage to the life-support system, the outbreak of wars over scarce resources, and greatly increased human suffering clearly indicates a need for urgent action. Yet Muslims world-wide have largely ignored this looming climacteric. Two obvious reasons for this are vested economic interests and debilitating poverty. But a more ubiquitous reason is a fundamentalist over-concern with religious externals. Muhammad Asad highlights the cause and the consequences of this failure to attend to social problems thus:

... [I]n an ideology like the Islamic one there can be no dividing-line between the 'spiritual' and the 'worldly' spheres - and therefore also no dividing-line between man's faith and his practical life ... a neglect of one must unavoidably lead to a decay of the other ... Because most of our religious leaders have failed to ... guide the community in the practical affairs of life as well, and instead have confined themselves to considerations of mere ritual and eschatology, the Muslims have gradually lost their erstwhile ideological impetus and, thus, all cultural and social creativity.<sup>71</sup>

Such a situation is indeed tragic because authentic Islam by virtue of the comprehensive nature of its concerns has much to say about the moral and material plight that we humans face as we reach the end of the millennium.

Much has been written (by non-Muslims) about the environmental crisis. Its causes, and the ways to resolve it, have been found residing in such diverse places as world-views, paradigms, ethics, values, science, technology, economics, national and international politics, and more. Indeed, the causes and solutions can rightly be seen as multifaceted, reflecting the systemic nature of life.<sup>72</sup> Capra summarises this systems view of life in this way:

Living systems are organised in such a way that they form multi-level structures, each level consisting of subsystems which are wholes in regard to their parts, and parts with respect to the larger wholes.<sup>73</sup>

So, necessarily, the causes or solutions we identify depend very much

on where we 'enter' the system, that is, on which subsystem we choose to focus on. In this essay I want to focus on two key concepts of scientific ecology<sup>74</sup> and then to call attention to the need for the type of understanding provided by these concepts to flourish throughout the human community. As I am addressing the Muslim community in particular, I want to convey some idea of the relationship between ecology and Islam.

### **Ecology and the Environmental Crisis**

Much sense can be made of the environmental crisis by referring to the key concepts of 'ecosystem' and 'ecological succession'. An 'ecosystem' is an assemblage of associated species of plants and animals together with the physical features of their habitat. Ecosystems are not restricted in size or rank and can range from the whole Earth or biosphere to a forest or a single pond, or even smaller. Natural ecosystems benefit humans through the supply of goods and services<sup>75</sup> such as natural foods, raw materials for industry, medicines, climate control, storm buffer, biogeochemical cycling (e.g. absorbing carbon dioxide and producing oxygen), conservation of water, storing floodwater etc. They also play a crucial role in managed systems, such as agriculture, which depends on water and soil from the natural ecosystem. Natural ecosystems may be altered by human systems, especially through the latter's disposal of wastes and through various human impacts on the natural ecosystem. These wastes and impacts put pressure on the natural ecosystems and may endanger their ability to contribute natural goods and services, resulting in a reduced flow of benefits to humans.

Ecological succession refers to:

changes in species structure and community processes  
[as an ecosystem passes from youth to maturity].<sup>76</sup>

To compare,<sup>77</sup> in general, young ecosystems exhibit higher net primary production,<sup>78</sup> lower species diversity, and higher yields, all of which account for their association with farming systems throughout the world. But they are highly unstable and require continuous management efforts if they are to be maintained at a required stage of development. Mature systems, on the other hand, exhibit higher species diversity, lower yields, and high rate of energy production, but

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they also have a high rate of energy use. They are difficult to manage but allow the pursuit of recreational and aesthetic values, and provide environmental quality. They achieve long-term stability and are self-maintaining.

Thus, according to Odum,<sup>79</sup> the tendency of natural ecosystems to develop in complexity conflicts with the goal of maximum production, which is essentially achieved through the increasing specialisation or simplification of ecosystems, e.g. through forest or agricultural monocultures. We also need less-productive landscapes or self-maintaining, mature ecosystems, which would help to sustain our life support system by providing pure air and water, climatic protection, nutrient recycling and other functions.<sup>80</sup>

According to Odum, the two main alternatives open to humans to ensure a sustainable future are either to bring about a

...compromise between quality of yield and quality of living space [for example by placing a greater emphasis on organic farming] or to deliberately compartmentalise the landscape to maintain both highly productive and predominantly protective types as separate units subject to different management strategies (strategies ranging, for example, from intensive cropping to wilderness management).<sup>81</sup>

Odum's compartment model of environmental use planning is shown in figure 1.

It should be noted that all of the components continuously interact in terms of inputs and outputs.

FIGURE 1: COMPARTMENT MODEL OF ENVIRONMENTAL LAND USE PLANNING (Based on Odum (1983) pp. 491-493)

Environmental Compartment	Type of Ecosystem	Functions	Example
1. Productive life-support environment	Early successional or growth type	Provide food and fibre	Croplands, pasture, tree plantations, intensively managed forests.
2. Protective life-support environment	Mature	Stabilise substrates, buffer air and water cycles, moderate extremes in temperatures, provide some products	Old growth forests, climax grasslands, oceans
3. Waste assimilative environment	Dissipative	Assimilating a limited amount of wastes produced by compartments 1 and 4	Waterways and oceans, wetlands
4. Urban industrial environment	Non-biological	Production and consumption of non-biotic resources	Human settlements, industry

Such a compartmentalising strategy would make life better and more sustainable for humans.<sup>82</sup> But given our present level of ecological knowledge, one cannot deny that it would be extremely difficult to determine objectively just how much natural environment must be preserved within any particular country or region to support its desired level of development.<sup>83</sup> Nevertheless, from the perspective of ecological science it is clear that large amounts of land do need to be set aside where humans interfere only minimally in ecological processes. A further requirement would also be that each environmental component outlined in figure 1 be managed on a more benign and sustainable basis. For example, it would be necessary to ensure that agricultural activities do not deplete the soil of its nutrients or use biocides to an extent which would exceed the waste-absorbing capacity of waterways into which they are ultimately discharged. It would also be necessary to ensure that industry and human settlements did not lead to a collapse of ecosystem functioning e.g. through the excessive production of wastes and pollutants.

## The Ecological Attitude and the Islamic View of the Environment

How then to achieve a transition to such a state of affairs, given our species' insatiable appetite for radically transformed, homogenous landscapes, producing highly specialised short-term benefits? It is my contention that a major requirement is the widespread adoption of an 'ecological attitude'<sup>84</sup> and that such adoption is likely to be made easier by improved scientific ecological knowledge and its diffusion through all channels of education, and by greater emotional or spiritual sensitivity towards the natural world.<sup>85</sup> The ecological attitude would include<sup>86</sup> the recognition and acceptance that:

man can cause irreversible changes in nature, sometimes leading to species extinction, which will ultimately impoverish the human community, spiritually and materially our environmental resources are finite and non-renewable and must be used sustainably our environment has a limited capacity to absorb waste and pollution and therefore as far as possible it should be recycled harmlessly our world and its resources are finite and cannot support an ever-expanding population, technology or economy sufficient amounts of land must be set aside where human interference in ecological processes is minimal our humanity is more fully expressed when we exhibit a sensitivity towards the needs of species other than our own.

The question I wish to address now is this: Is Islam congruent with such an ecological attitude?

The Qur'anic portrayal of nature, as found in numerous verses, both Meccan and Medinan, is multifaceted. Nature is created by God, the Qur'an emphatically declares.<sup>87</sup> Whereas God is characterised by Unity (*tawhid*), nature is characterised by duality.<sup>88</sup> But duality in the sense of complementary opposites, or a pair, as denoted by the Arabic term *zawj*. Another characteristic of nature found in the Qur'an (and in much ecological theory) is order or balance.<sup>89</sup> The idea of a divinely arranged order in nature that we find in the Qur'an may be said to refer to the idea that nature is the purposive creation of an omnipotent and omniscient God and is therefore perfectly ordered and structured. When nature is not disrupted by evil human forces such order and structure is sustained. In fact the Qur'anic command:

... Do not spread corruption on earth after it has been so well ordered<sup>90</sup>

expresses well such a concept of nature. When the Qur'an directs man's attention to such order in the universe it is to an order perceivable by the ordinary processes of perception.<sup>91</sup> But there is also a deeper side to the orderliness of nature referred to in the Qur'an, which is not perceptible by the senses. This characteristic of nature is well expressed by Rahman<sup>92</sup> using a particularly Islamic idiom:

According to the Qur'an, when God creates a thing (*khalq*), He at the same time puts into its nature, its potentialities, and the laws of its behaviour (*amr*, command, or *hidaya*, guidance) whereby it falls into a pattern and becomes a factor in the 'cosmos'.

Since everything in the universe does behave in accordance with its ingrained laws —automatically obeys the 'command' of God — the whole universe is therefore *muslim*, surrendering to the Will of God.

The Qur'an frequently refers to nature as a 'sign'<sup>93</sup> (*ayah*) of God and frequently exhorts man to study nature so that he will, *inter alia*, become convinced of spiritual realities.<sup>94</sup> According to Muhammad Asad, in the Islamic conception of reality or Being, there is no strict division into 'natural' and 'supernatural' categories:

Everything that is, happens or conceivably could be or happen, is a result of God's creative activity and is therefore not only 'natural' in the innermost sense of the term, but also belongs to one and the same conceptually integrated reality.<sup>95</sup> Certain aspects of this multifaceted, complex reality are directly open to human insight and comprehension and are, therefore, referred to in the Qur'an as the 'observable sphere of Being' ('alam ash-shahadah), while certain other of its aspects remain temporarily or even permanently beyond the reach of human perception, and belong, accordingly, to the 'non-observable sphere' ('alam al-ghayb).<sup>96</sup>

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In this context the contemplation of nature is seen as 'one of the foremost ways towards a deeper understanding of God's creative activity through which He reveals to us His Being.'<sup>97</sup> Nature as 'sign' also reflects God's mercy<sup>97</sup> or His greatness.<sup>99</sup> In fact one might say that the paradigmatic Muslim response to nature is contained in 'Ali's<sup>100</sup> statement, 'I wonder at the man who observes the universe created by God and doubts His Being.'<sup>101</sup>

Numerous verses in the Qur'an point to the fact that nature is subservient to man.<sup>102</sup> According to Asad<sup>103</sup> though (and he claims the support of the majority of classical commentators), this subservience should be taken as a metaphor (*majaz*) for God having enabled man to derive benefit from nature. If we were to interpret the subservience of nature in a narrow sense this would apparently exclude those creatures for which humankind has no obvious use. Yet the Qur'an endorses the view that all creatures are indeed part of the scheme of things. They are described as being provided of their sustenance by God<sup>104</sup> (as is man), as being part of the Divine purpose,<sup>105</sup> and as being communities just like human communities.<sup>106</sup> More remarkably perhaps, all created things, animate and inanimate, are described in the Qur'an as worshipping God:<sup>107</sup>

*There is not a thing but celebrates His praise, and yet you understand not how they declare His glory.*<sup>108</sup>

This is how the Qur'an phrases it, at once reminding us of the grandeur and mystery of His creation and of our own limited comprehension of it. It is difficult to imagine a more profound basis of community or a more profound sense of identification and value<sup>109</sup> than the common worship of the creator by His creatures. On a more mundane level too, the Qur'an is entirely free from postulating a sharp dichotomy between human life and nature. According to Muhammad Asad, Islamic doctrine asserts that:

Man is an 'animal' in the sense of organically belonging to that group of living beings which are endowed with the faculties of sensation, perception and movement, as well as in the sense of being dependent on physiological needs and functions more or less resembling those of other animal beings.<sup>110</sup>

Yet the reality of human life cannot be fully explained by reference to biological categories only. The unique aspect of human nature is portrayed in the Qur'anic story of the *amanah* or 'trust of reason and will' (in Muhammad Asad's translation<sup>111</sup>) whereby man was given the ability to exercise choice between good and evil. (This *amanah*, according to the Qur'an, was first of all offered to other creatures of God who refused it out of fear of being unable to bear such a heavy burden). This rational consciousness of man gives him in effect the 'ability to form concepts and to bring them together in countless combinations by means of mental processes which can be guided and directed by his will.'<sup>112</sup> Thus, whereas other animals adapt to their environment or suffer the fatal consequences, man has become increasingly skilful in adapting his environment to suit his own ends through animal husbandry, agriculture, medicine, human settlements, or more generally we might say, through science and technology. These activities are all endorsed by Islam and thus environmental transformation is, from the Islamic perspective, an inevitable component of life. But according to Islam, man should not carry out these activities arbitrarily. The *hadith* or sayings of the Prophet Muhammad frequently exhort man to be compassionate towards animals.<sup>113</sup>

Moreover, the Qur'an, as well as setting up a vision of nature in relation to God and man also sets out an ethical code to guide man: waste is abhorred,<sup>114</sup> so is haughtiness and all its expressions in boastful displays of wealth.<sup>115</sup> Instead, the Qur'an exhorts moderation and distributive justice.<sup>116</sup> There is also in existence a body of Islamic resource law, dating from the time of the Prophet (pbuh) which prohibits private ownership of common property resources such as pasture, woodland, wildlife and water, which must be managed for the common good. According to Sardar,<sup>117</sup> wildlife and forests are safeguarded in *hima* or reserves which are established solely for conservation purposes. Islamic juristic rules (*quwa'idatul-fiqhiya*), or case law, already exist which can be applied to the management of natural resources. Masri<sup>118</sup> illustrates (theoretically) how they could be applied to exercise control over animal experimentation and Ba Kader *et al.*<sup>119</sup> illustrate (again theoretically) how they could be applied in a variety of environmental quality issues.

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**Conclusion**

I hope I have shown beyond doubt that Islam is congruent with the ecological attitude. More accurately, one might say that what we now call the ecological attitude has been (in some form) an integral part of Islam. But centuries of profound moral, social and political decay have resulted in a forgetfulness of man's true relationship with nature as portrayed in the Qur'an and the *hadith*. Unfortunately, many Muslim countries have rushed to adopt, indiscriminately,<sup>120</sup> what, for shorthand, we can refer to as Western modes of thought and modern technologies, both of which have arisen from an essentially secular, and thus deformed, matrix of values<sup>121</sup> and have had a devastating effect on the social and natural environment.<sup>122</sup> In reaction to the social dislocation, many conservative Muslims have, on the other hand

insist[ed] on the maintenance of all traditional forms and, oppose[d] the Westernisation of their community, base[d] ... not so much on the real values of Islam as on the social conventions evolved in the centuries of [Muslim] decadence.<sup>123</sup>

But neither strategy will guarantee that Muslim societies will be able to meet their legitimate material needs sustainably and justly along with their spiritual needs. What then should they do?

Muslim countries are, despite the commonality of faith, nothing if not heterogeneous — physically, socially, culturally, economically and politically. It follows therefore that their often strikingly different environmental problems will require different solutions. But most probably there are two overriding interdependent developments in Muslim countries that would do much to promote the flourishing of the ecological attitude and help, however modestly, to avert a crisis of biospheric proportions.

The first of these developments will involve an elaboration of the world-view of Islam which highlights the significance of perennial Islamic values and concerns for contemporary Muslims (and of course for all of mankind). For example, no one, of whatever Islamic school or sect, doubts the centrality of *tawhid* (the idea that God has dominion over all fields of endeavour), yet, as a community, Muslims cannot really claim to accept this or bear witness to this until justice ('*adl*) is established throughout society and tyranny (*dhulm*) over man or

nature, whether by individuals, social groups, economic and political processes, or indeed medical, industrial or post-industrial technologies, is banished. In a similar vein, the search for knowledge (*i'lum*) cannot be considered worship (*ibadah*) unless it promotes justice and the public interest (*istislah*) and does not lead to tyranny.<sup>124</sup> This process seems to be getting off the ground although at present it is largely restricted to academic circles.

Secondly, Islamic countries need to introduce political changes which would, among many other things, be more conducive to realising ecological values. To be administered, it would require vesting the State's legislative powers (such as they are under the *Shari'ah*) in an elected assembly (*majlis ash-shura*).<sup>125</sup> Unfortunately, many Muslim countries have authoritarian leaders who are intent on realising a rather narrow range of development goals and who do not tolerate dissent. Such political changes as are mentioned here would be more Islamic and would provide more scope for independent groups of scholars or nascent environmental and human rights groups to educate and influence economic and social decision-making. On this point Asad (1980) states:

If freedom of opinion and of criticism is recognised as the citizen's inherent right (as it undoubtedly is in the political concept of Islam), the people must be accorded the freedom to group together, if they so desire, for the purpose of propagating certain sets of views as to what should be the policy of the state on this or that question, and provided those views do not run counter to the *shari'ah*. (p.61)

Of course promulgating the ecological attitude so as to establish a transition from our current resource profligacy to a sustainable society does not, as Thomas Vargish reminds us, deal with 'ultimate purposes or the meaning of human life, but its survival'.<sup>126</sup> Just as ecology can never exhaust the meaning of nature for man because this is tied up with nature's relationship with God which is ultimately unfathomable,<sup>127</sup> the sustainable, ecologically sound society if ever achieved would never fully satisfy man, for satisfaction ultimately depends not on the relationship of human beings with nature but on their relationship with God. As the Qur'an succinctly puts it:

*Consider the flight of time! Verily man is bound to lose himself unless he be of those who attain to faith, and do good works, and enjoin upon one another the keeping to truth, and enjoin upon one another patience in adversity.*

(103:1-3)

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## PRINCIPLES INTO PRACTICE: ISLAMIC TRADITION

Ismail (Peter) Hobson

The heartland of Islam, where it originated, and the areas to which it later spread and established itself, largely coincide with regions of climatic extremes of heat and dryness. The Arabian Peninsula as a whole (excepting the verdant south known, for that reason, as Arabia Felix by the Romans), North Africa, Southern Spain, Syria, Persia, Mesopotamia, and North West India are all areas of intense sunlight and sparse rainfall. Yet it was here that Islamic civilisation established itself with a particular brilliance of cultivated urban life and with a magnificent architecture, the traces of which can still be seen and marvelled at.

Intrinsic to Muslim worship is water for ablutions. Water in fact is essential for everyday life anywhere, but for Muslims it has a Paradisal significance, which we see reflected in the traditional watered gardens, and courtyards with fountains, in innumerable palaces and cities, which echo the Qur'an's description of Paradise 'whereunder the rivers flow.'

To supply and ensure water, to counter the intense heat by simple means, and to ensure bountiful agriculture in conditions of burning sun and little rain, all these were challenges which were met more than adequately by Islamic technology, much of it inherited from former civilisations, but all of it tempered by principles of moderation, sobriety and gratitude for Allah's gifts of water, sunlight, shade, food-bearing plants, cattle and beasts of burden - a gratitude enjoined by innumerable Qur'anic verses of compelling beauty.

### Water Supply and Water Conservation

In those parts of the Islamic world that have major river systems,

notably Egypt, Mesopotamia and India, the supply of water has presented few problems beyond the need to expand the area of fertility by means of irrigation. Building upon pre-Islamic experience and techniques, Muslim scientists developed a remarkable mastery of water distribution.

But it was in areas lacking great rivers that ingenuity and patient labour achieved their greatest attainments. Dams were thrown across minor rivers to create lakes, two notable examples of which survive near Qayrawan in Tunisia and outside Marrakesh in Morocco.

East of Fez, the river was dammed above the level of the town which, being built upon a slope, was then supplied with water for all purposes, using channels and supply-pipes dependent simply on the flow of gravity. This water could also be released in quantity to clean the streets and maintain a high standard of public hygiene.

Water from distant sources such as mountain springs or melting mountain snow, or from far-off rivers and springs was carried by an ingenious network of aqueducts and canals. Many of these are still used, in Spain and Portugal notably. However, the most remarkable means by which water was, and is, supplied over vast distances with a minimum of loss by evaporation, is to be found particularly in Persia, namely, the network of underground canals known as *qanat*, or *kahriz* in Persian. In the words of Dr Seyyed Hossein Nasr, in his book *Islamic Science, an Illustrated Study*,

All the known methods of mathematical calculation and engineering were put to the service of this art which brings water from high mountain regions through underground canals to towns lying near deserts and deprived of local sources of water. To dig these canals, to determine their correct direction some fifty feet or more underground, to construct the canal with the correct inclination, to clean and repair a *qanat* which sometimes continues for miles, and finally to determine where to begin the *qanat*, so that the original wells which supply the water will not dry easily, is no simple task.

The notion of conserving supplies and making the best of what is scarce is well exemplified by the system formerly used in the old town

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of Jeddah, the Red Sea port that is the gateway to the Hejaz and the Sacred Cities of Makkah and Madinah. Jeddah, familiar to pilgrims over the centuries, is also notorious for its intense heat and humidity and very infrequent rain. Available in only modest quantities from wells, water was stored in houses for a descending scale of uses: fresh water was reserved for drinking, cooking, bathing and, very importantly, for the ritual ablutions before prayers; what was left was then stored for cleaning the house; what then remained could be used to water plants or to clean the streets. In no cases was water simply poured away. This is so simple as to be hardly remarkable at all except in contrast to the prodigality that prevails today: water is now piped in from the nearby oasis of Wadi Fatimah, the date-palms of which have died through water deprivation. Other water is drawn from artesian wells in such vast quantities, for Jeddah and elsewhere, that the water-table is falling dangerously. In addition, much water is provided by desalination plants which process sea-water at the cost of much energy which, being ultimately dependent upon the combustion of fossil fuels, plays its part in attenuating the ozone-layer and accelerating the greenhouse effect. Jeddah has become, in this respect, a great Western city on the modern Californian pattern.

### Town Planning and Natural Cooling

Modern towns built in hot regions tend to be typified by broad streets and avenues, with the town-centre marked by tall buildings of rectilinear design with a great deal of glass window-space. The residential suburbs consist either of apartment buildings or of small houses, each with a garden, generally set out in rows. Cooling depends largely upon electric-powered refrigeration plants and fans, particularly in the glass-plated semi sky-scrapers that draw in the full light and heat of a burning sun.

Transport is predominantly by truck for commerce, and by private car for the individual. The expenditure of energy to keep this complex habitable is prodigious and, obviously, ultimately counter-productive in that it pollutes the air and exacerbates the overall 'greenhouse effect.'

In fact, the design of these modern towns and cities in the hot regions of the world is fundamentally a transposition of styles and

conventions originating in cold, or temperate, northern lands, and therefore *a priori* likely to be inappropriate.

By contrast, the indigenous Muslim towns and cities that have arisen over the centuries in some of the most arid and hot desert landscapes, such as Isfahan, Kashan, or Yazad in Persia, Old Cairo, or Qayrawan in Tunisia, and countless others, some in countries that are not so desolate but yet hot enough in summer, such as Fez and Moulay Idris in Morocco or even Seville and Granada in Muslim Spain, have an entirely different aspect.

There are, to begin with, no great open squares or broad avenues on which the sun can beat down with devastating heat and glare. On the contrary, houses lean against one another in a honeycomb fabric threaded by innumerable alley-ways into which the direct sunlight can penetrate only at mid-day. The architecture is inward-looking, each house is practically indistinguishable on the outside from its neighbour, but when one enters from the alley-way or corridor, one finds shaded rooms built around a central courtyard in which, in many cases, there will be a pool or a fountain and perhaps some trees or lesser vegetation. The courtyard provides openness and coolness. The cooler night air that gathers there is sheltered from the sunlight for the part of the day when the sun is not directly overhead. The surrounding rooms are never exposed to the sun, being provided with curtains or the screens of carved wood known as *mashrabiyyahs*. Far from amplifying the heat through glass, in fact, there is generally a total absence of glass in order to let the air move freely. Since, by intention, the commercial quarters, known as the *suq* or *bazaar*, are built away from the residential areas, there is also a minimum of noise and smell.

It was the Prophet Muhammad (peace be upon him) who declared that no one should forbid his neighbour to fix a beam into his house's outer wall, in such a way as to share a wall between them, but said also that one should not build in such a way as to overlook his neighbour's courtyard. Similarly, it is the Sunnah, or recorded practice, of the Prophet (s.a.a.s) which, as it established a way of life and worship for the family unit in the home, determined the architectural forms required to meet this. The same is true of the public aspects of traditional Muslim cities, the mosques erected in the

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very heart of the commercial areas to enable merchants to attend the Friday prayers in particular with little inconvenience and the public baths nearby to ensure the cleanliness commended by Islam. There were once nine hundred public baths in Muslim Cordoba alone.

In addition to the avoidance of heat-discomfort by the disposition of buildings and by the inward-looking architecture of houses, Islamic tradition devised various simple technologies of cooling by making the best use of the available wind and the coolness induced by evaporation.

Thus wind-towers became an outstanding feature of urban architecture in the arid desert areas of Persia. Built above roof level and facing the prevailing wind, they lead air down into the interior of buildings and, in many cases, play it over water surfaces to induce further cooling by evaporation. In high summer, refuge can be sought in deep basements in which air from the wind catch is channelled over deep water cisterns. Another simple device is simply to induce evaporation through semi porous jars, often of great size, thereby cooling both the surrounding air and the water itself.

The simplicity of these means is matched only by their effectiveness and beauty. There is, in any case, a benediction in natural, elemental environments; sunlight, shade, moving air and the sound of running water or of water splashing from fountains carry a blessing (*barakah*) and a comfort to the soul that a typically modern environment encased in glass, steel and concrete and humming with air-conditioners cannot provide, to say nothing of an economy of means that does not squander materials and energy. No matter how much these mechanised modern interiors may be helped out by potted plants and coffee-shop greenery, they do not - unlike the traditional buildings - invite one to prayer and contemplation, or even to peace of mind.

The Islamic solution lies in adherence to pervading principles of simplicity, usefulness and beauty which are in essence spiritual and in their application concrete and practical. They support a way of life which is formulated by the Qur'an and the teaching by example of the Prophet (pbuh), and it is from this that its measure and equilibrium devolve.

## Agriculture, Pharmacology, and Medicine

Two realms of difficulty in the modern world are mechanised agriculture dependent very much upon chemical fertilisers, and drugs and their over-use for the care or alleviation of physical and mental illness. So-called 'agribusiness' disrupts small-scale farming designed to meet local or individual needs and substitutes for it large scale production of single crops for export to distant markets. Concomitantly, tropical forest is destroyed in order to provide vast new lands for agricultural exploitation for which it proves, in fact, to be unsuitable. Likewise, the widespread use of chemical fertilisers and pesticides destroys wild plants and wild life, both animals and insects: absorbed into the soil, they drain into lakes and rivers, polluting water supplies and killing off fish.

It would be wrong to think that the Islamic agricultural tradition, being very different and much smaller in scale, is irrelevant to the solution of the various modern imbalances. It has, in fact, much to teach us.

To begin with, Islamic agriculture could well be on quite a large scale. The agricultural hinterland had to supply the needs of huge cities, such as Cordoba, for example, or Isfahan, surrounded by desert. Food of all kinds, cattle, grains, vegetables, spices and fruit were despatched over great distances to the bazaars of merchant towns, and without them the towns could not have survived. The sparse rainfall in most of the lands where Islamic civilisation reached its zenith made complex works of irrigation essential. Water for this purpose had frequently to be led over aqueducts or underground by *qanat* from distant lakes, wells and mountains. All this necessitated public works on a very grand scale indeed, financed partly by the ruler and partly by the families who owned large agricultural estates.

Moreover, the planting of trees and orchards and the growing of grain, and the quickening uses of water, are mentioned so frequently in the Qur'an as to give a religious sanction to the sciences of plant-breeding, the exchange of plant stocks between widely separated regions, and the improvement of products by grafting and so forth. Products which, being the result of enterprising Muslim development, are still very much with us, include coffee, sugar-cane, cotton and a whole range of fruits from oranges to melons and peaches (the

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'Persian Fruit', as the name still indicates). It is interesting to note that when European colonising enterprise burst on the world, much of its activities turned around the Islamic products of coffee, sugar-cane and cotton, later transferred to the new world.

Certainly one of the most striking manifestations of Islamic agricultural skill was the transformation of the barren valleys of pre-Islamic Spain into a paradise of grapes, grain, and fruit trees by the introduction of a whole set of plants from the eastern Muslim world, together with appropriate techniques of irrigation and cultivation from the same areas. The gardens of Cordoba flourished, under the Arabs, with an almost tropical luxuriance. By contrast, after the expulsion of the Moors from Spain, the gardens withered away, the fertile valleys grew barren again and so little profit was taken from the rich Andalusian soil that the Crown lands about Granada were sold off because simply maintaining them cost more than the Spaniards could make them yield.

Some of the technical secrets that wrought these agricultural miracles without the abrasive methods of today are contained in various treatises on agriculture, the most informative of which is probably the *Kitab al-filahah* (The Book of Agriculture) by Abu Zakariyya ibn Awwam of Andalusia. In the thirty-five chapters of this work, 585 plants, including 55 fruit trees, are described together with their cultivation. Many other similar works exist, and successful Islamic agriculture under the most adverse natural conditions is exemplified in region after region, from the terraced mountainsides of the Yemen to the orchards of the Middle East and the gardens of Mughal India.

The ecological message seems to be that no matter how large the land holdings and how extensive the irrigation, the actual tilling of the soil and the planting of orchards should be carried out on a modest human scale revolving around the coordinated activities of family units combining husbandry and agriculture. That farming should be on the one hand bold, constantly introducing new plant stocks and fresh breeds and, on the other, should eschew specialisation that narrows the gene-pool or - as goes without saying - artificial fertilisers that upset a whole series of natural balances, is proved by the results obtained. To this must be added the conviction that husbandry and the raising of

crops are occupations blessed by Allah and beneficial to man and that the necessary activities associated with them fall into a rhythm like that of the daily prayers or the festivals (*eid*) of the religion. It is recounted that when the Prophet (s.a.a.s) was asked what he would do if he knew that the end of the world was imminent, he replied: 'plant a tree'.

The Muslims, believing that Allah never fails to provide for his creatures what they need, when and where they need it, were not preoccupied with devising complex drugs and medicines in a laboratory, but were concerned to discover what remedies Allah has provided in nature. The result has been to produce an elaborate pharmacology of herbal remedies and medicinal lore. The traditional healing methods varied from place to place, depending upon the herbs locally available, whereas the principles of healing were derived and adapted from those of the Greeks, Hindus and Persians.

Hospitals were generally attached to institutions of learning, and doctors were rarely specialists in healing but were men of wide learning and piety, skilled, therefore, in diagnosis and broad remedies that embraced the psychological and the spiritual as well as the bodily aspects of sickness. The gardens of herbs and orchards that were attached to the hospitals were the precursors of the botanical gardens of the West.

The ecological lessons here are that it was, and remains, the Muslim instinct to avoid over-specialisation and to avoid running to the sort of extremes we see in the West today, such as our excessive reliance upon laboratory drugs. They grasped the interdependence of factors and of things. This follows logically from the understanding that all things, without exception, depend upon Allah.

In Islam the rules of religion are not separate from ordinary life, or from research, or from the application of scientific knowledge, but are intrinsic and, in fact, determinative. It is for this reason that equilibrium is maintained. The branches of knowledge are all branches of a single tree whose roots are grounded in the belief in One God. From this derives the sense of unity and balance.

It was this which, even after the devastation of monstrous wars, such as the Mongol invasion of the Islamic world, made possible a reinstatement of the wrecked civilisation with miraculous speed and

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completeness, converting the victors too.

**The Problem of Energy Sources**

The operation and maintenance of the modern world depends upon the ceaseless consumption of innumerable energy sources, predominantly the fossil fuels of oil and coal, together with natural gas, nuclear power, hydro-electric power and so forth. By these, electric power is generated, on which depends the greater part of what typifies the technological civilisation of the West, and without which all would grind to a halt except perhaps for cars and diesel trains. Without electric power the whole fabric would be depleted. Reduced to what they had before the electricity age, people would grope impotently through the shells of lightless, heatless skyscrapers without elevators and return to cold homes and candle light. It is easy to picture the chaos if all the technology had no longer any empowering force, and it is not amusing to dwell on the subject.

To this, on the assumption that Westerners wish to perpetuate the present situation, Islam has no answer. The present state of affairs is typified by disequilibrium on many levels because the situation to which we have come is both intensely convenient and comfortable for the developed world, and a source of some deprivation, including hunger, for the rest, and because the comfort and convenience are, as it were, heightened by a sense of crisis and even of impending doom, and certainly by various moral problems too. This state of affairs is therefore alien to the values of Islam. It is clear too that the Islamic world - using the term in the geographical sense and not its essential, qualitative one - has not been immune to this disequilibrium. Much of what is called Islamic fundamentalism represents a hurt and confused reaction to the real or perceived imposition of Western disequilibrium on Islamic societies which, being static, have been felt to be stagnant.

Traditional Islamic society, no matter how rich in spiritual and aesthetic content, was slower, and simpler in its technology. The production of the artefacts and adornments did not wreak havoc on nature or strew debris over land and sea. Means were simpler, materials natural and even crude. Exquisite ceramics emerged from raw clay and textiles of unrivalled beauty were born from hand-looms

and the hand of the embroiderer. Travel, although surprisingly extensive - consider the journeys of Ibn Battuta - was on foot, on beasts of burden or by sailing boat.

The above characteristics are not exclusive to Islam. It is simply that Islam brought them to a pitch of civilised excellence and sustained them for hundreds of years over vast areas inhabited by diverse races, and did so by the power of a religion that is not only still with us, but which is increasing the number of its adherents each day.

If, in fact, the present energy sources of oil, coal and natural gas, and even hydro-electric power and nuclear generation were to fail, or if the power industry were to be wrecked by a disastrous war, or by some hardly imaginable natural disaster on a worldwide scale, the values of traditional Islamic civilisation would not be affected and the ancient cities of Islam could still function. Without the airplane, the ancient caravan routes and sea-routes would come into their own again. Without television, there would still be the daily prayers and the chanting of the Qur'an, and the poets could still declaim their sublime verses. The voice of the *mu'adhdhin* would, as before, float over peaceful towns and cities unassisted by electronic amplifiers. In other words, Western technological civilisation would collapse; Islam - or at least the Islam that had remained simple and true to itself - would be immune. In this sense, the problem of energy sources - or of maintaining the increasing present levels of energy consumption - does not concern Islam.

The traditional energy sources endure for ever - wind-power, water-power, the heat of the sun, the combustion of waste materials. There is only one rule for their use, and that is to avoid extravagance and squandering. Muslim potters heated their kilns by burning fruit husks, fruit stones, pine-cones and vegetable waste. Millers ground their corn in mills turned by the wind, as in Europe - though the device appears to have originated in Eastern Persia - or by the strength of tethered beasts. Both windmills and animals were used to lift water into irrigation channels.

All these usages are obvious. The problem comes, even in the traditional orbit, when too much kindling wood is taken, so that hills are stripped bare of trees, exposed to wind and rain and eroded of topsoil. There are just too many people in, for example, parts of

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India, for these kinds of excesses to be avoided. Should electricity, therefore, be used for heating instead? Quite clearly it should if it can be generated by means that do not imperil the environment. It would seem legitimate, therefore, from an Islamic standpoint, to look at such obvious methods of electricity generation as harnessing the tides, expanding hydro-electric plants - with the obvious environmental safeguards - and using solar energy.

However, it should be understood that these are crisis measures necessitated by a world that is already unbalanced. There is really no alternative for a rounded solution, to accepting a far simpler, and actually more wholesome lifestyle, at the heart of which is worship of Allah and the acceptance of limits imposed by Allah.

The world is not an absolute. The world is a transient stage in a movement to eternity. It is a testing place. Allah has created death and life in order to test which men are the best in their actions and attitudes:

*All-Blessed is He in Whose hand is the dominion of all things, Who has created death and life that He might test you which of you be the best in act.*

(Qur'an 67:1-2)

*Verily We (Allah) have made whatever is upon the earth an adornment to it, that We might test them (human beings) which of them be the best in act, and verily We shall make all that is upon it barren, dust.*

(Qur'an 18:7-8)

As the Prophet (s.a.a.s) said:

Be in the world as though you were a stranger or a wayfarer.

(Hadith: Bukhari)

In the light of this, the rightful preoccupation of men should not be to treat the world - wonderful though it is and replete with the signs of Allah - as an object of impassioned attention and exploitation. Still less, in his over-evaluation of it, should the imbalance of his

perception lead him to a whole series of actions that disrupt the equilibrium in nature. The root of the present environmental problems, and of all the other social and moral dilemmas, is that deracinated Western man has gone beyond the bounds. The only solution is to go back to them. Islam's real contribution is not, therefore, to suggest various ways of tampering with the *status quo* in order to perpetuate it whilst alleviating some of its horrors or clearing up some of the mess. It is to insist on the doctrines and principles that prevailed before Western man leapt into his destructive leadership of the world and to point the way back to a saner and simpler order, Allah willing, before it is too late.

*Our Lord! Give us what is good in this world, and what is good in the Hereafter, and save us from the torment of the Fire. Amen.*

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**WATER IN THE QUR'AN**

M.A.S. Abdel Haleem

*We made from water every living thing (21:30)*

In this concise and powerful statement the Qur'an sums up and draws attention to the vital importance of water. In perusing the pages of the Qur'an, one finds that water is a major theme. The word 'water' (*mar*) occurs over 60 times, 'rivers' over 50 and 'the sea' over 40; while 'fountains', 'springs', 'rain', 'hail', 'clouds' and 'winds' occur less frequently. The Qur'an, however, is not a science text book and does not discuss the chemistry and physics of water, rather it is a book 'for the guidance of mankind'. Thus, as we shall see, it treats the theme of water in its own way and for its own objectives. Water is shown not merely as an essential and useful element, but one of profound significance and far-reaching effect in the life and thinking of individual Muslims and of Islamic society and civilisation. From the Qur'anic treatment of the theme of water we also learn much about patterns of persuasion in the Qur'an as well as its characteristic language and style.

Water is one of the most precious resources on earth. The verse quoted above explains in the Qur'an's characteristic way, how vital it is for all living things. The Qur'an talks about two kinds of water, ... *one palatable and sweet, the other salt and bitter ... (25:53)*, pointing out some of their qualities and benefits, a division which we will conveniently follow here.

**Fresh Water**

It will be seen that on the theme of water, Qur'anic material and the way it is treated is lively, exciting and particularly intimate to man. Accordingly, references to fresh water are more extensive in the Qur'an than those to salt water. Although the Qur'an states:

*Allah is the Creator of all things and He is guardian over all things (39:62)*

and

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*He created everything and ordained it in due proportion (25:2),*

it does not simply state that Allah *created* fresh water: that would be rather abstract. Instead, it involves the reader in what he or she can ‘observe’ of the processes that generate water and produce its benefits:

*It is Allah who drives the winds that raise the clouds and spreads them along the sky as He pleases and causes them to break up so that you can see the rain issuing out from the midst of them (30:48).*

The Qur'an frequently speaks of the winds and the clouds:

*In the marshalling of the winds, and in the clouds that are driven between earth and sky: surely in these there are signs for people who have sense (2:164)*

*It is He who shows you the lightning, inspiring you with fear and hope and raises the heavy clouds (13:12)*

*It is He Who drives the winds, glad tidings heralding His mercy, and We send down pure water from the sky (25:48)*

*Do they not see how we drive the rain to the barren land and bring forth therewith crops of which their cattle eat, and they themselves? Have they no eyes to see with? (32:27).*

Qur'anic statements about fresh water constantly remind us that its origin is with Allah and not man. Thus the statements begin with (It is Allah... , it is He Who ...). This is further emphasised by a most significant statement in this context: *He sends down from the sky ..., immediately removing the source of water from the realm where men could claim they have made it and pointing out that He brought it down from that higher source.* The unbelievers are thus challenged in the Qur'an:

*Consider the water that you drink. Was it you that brought it down from the rain cloud or We? If We had pleased, We could make it bitter: why then do you not give thanks? (56:68-70)*

The repetition of ‘from the sky’ also draws attention to the surface reader that the sky contains water held there by His power and at will He ‘brings it down’, the Qur'an never saying ‘it falls’. Water being of such vital importance, human beings are reminded, ‘you are not the holders of its stores’; rather

*There is not a thing but with Us are the storehouses of it, and We do not send it down except in a known measure (15:21)*

## Benefits

The benefits of this gift from Allah are often pointed out. Drinking is naturally a high priority:

*And We send the water from the sky and give it to you to drink (15:22)*

*We provided you with sweet water (77:27)*

*We send down pure water from the sky, that We may thereby give life to a dead land and provide drink for what We have created - cattle and men in great numbers (25:48-49)*

In this instance, and in some others, cattle occur first – a sobering thought! They are also important in being, themselves, a source of drink and food for man.

Giving life to a dead land is a frequent expression that shows the beneficial effect of water in the Qur'an.

*There is a sign in the water which Allah sends down from the sky and with which he gives life to the earth after its death, dispersing over it all manner of beasts (2:164).*

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*It is He Who sends down water from the sky in due measure and thereby We quicken the dead land (43:11)*

The earth is revived to produce what benefits man and beast. The Qur'an repeatedly enumerates such products, detailing the observable phases they go through, and inviting the reader to look upon them:

*It is He Who sends down water from the sky and with it brings forth the buds of every plant. From these We bring forth green foliage from which We bring forth the thick-clustered grain, palm-trees laden with clusters of dates within reach, vineyards and olive groves and pomegranates (which are) alike and different. Look upon their fruits when they bear fruit and upon its ripening, surely in these there are signs for true believers (6:99)*

Water is driven to the dead land, caused to fall on it

*... and with it we bring forth all manner of fruit (7:57)*

*... fruits of different hues ... (35:27)*

*... watered with one water, yet We make some excel others in taste (13:4)*

Water has a dramatic and beautifying effect on earth which men are directed to observe:

*Do you not see that Allah sends down water from the sky and then the earth becomes green on the morrow (22:63)*

*You see the earth barren and lifeless, but when We send down water upon it, it thrills and swells and puts forth every joyous kind of growth (22:5)*

It is indeed a 'blessed' element that gives rise to such beauty and sustenance:

*We send down blessed water from the sky with which We brought forth gardens with harvest grain and lofty date-*

*palm trees with ranged clusters, a sustenance for men*

*(50:9-11)*

As mentioned earlier, the Qur'an deals with material very intimate to man, things taken perhaps too much for granted for him to reflect upon them. By pointing such things out and enumerating their phases and stages, the Qur'an refreshes people's sensitivity to them and invites reflection on them:

*Let man reflect on the food he eats: how We pour down the rain in torrents; We open the soil for the seed to grow; how We bring forth the corn, the grapes and the fresh vegetation, the olive trees and the palm trees, the thickets, the fruit-trees and the green pastures, for you and your flocks to enjoy (80:24-32)*

### Cleanliness

For Muslims, water serves another daily-recurring important function: cleansing and purification:

*He sends down water from the sky to cleanse you (8:11)*

Muslims are ordered: *Cleanse your garments (74:4)*. The Prophet said, 'Cleanliness is part of faith,' and in the Qur'an the instruction to cleanliness is a favour that warrants thanksgiving:

*O you who believe, when you rise to pray, wash your faces and your hands as far as the elbow, wipe your heads, and your feet to the ankle. If you are polluted, cleanse yourselves ... Allah does not wish to burden you, but desires to purify you and to perfect His favour to you and that you may give thanks (5:6)*

The Prophet urged his followers to cleanse themselves particularly for such a gathering as the Friday prayer 'even if a glass of water would cost a dinar', and the Qur'an stresses:

*[Allah] loves those who purify themselves (9:108)*

Understandably, emphasis is placed noticeably on water from the

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sky because of its vital importance for drinking and irrigation, but water on and in the ground is not neglected:

*From it also channels flow, each according to its measure*  
(13:17)

and:

*He leads it through springs in the earth* (39:21)

One of the stores of fresh water provided by Allah is in the ground. He '*lodged it in the earth*' (22:18). That Allah does not make this water soak away irretrievably and disappear is a favour, which is made clear by contemplating his power to do this if He so wishes:

*Say: 'Think: if all the water that you have were to sink down into the earth, who would give running water in its place'* (67:30)

*We could take it (drinking water) all away* (18:23)

*If We willed, We could make it bitter* (56:70)

The origins and effects of fresh water are shown in the Qur'an through a well-defined set of verbs in the Arabic causative form: '*sent down*', '*revived*', '*brought forth*', '*gave to drink*', '*to purify you with*', with Allah in the 3rd person singular or 1st person plural as their subject. Water is not simply there, it does not fall by itself, nor does the earth revive itself or plants come out by themselves. It is He who does it '*with*' or '*by means of*' water and this is the regularly recurring preposition, also '*from it*', emphasising over and over again the instrumentality of this vital element.

Connected with fresh water are rivers, which recur in the Qur'an over fifty times. They are the vessels of abundant 'running' water; the epithet forms a collocation with 'river' in the Qur'an, emphasised by the noticeable juxtaposition of the mountains 'standing firm' on earth, with the rivers (16:15; 27:61). The fundamental importance of rivers for cooling, irrigation and beautification is borne out in the frequent statements about Paradise in the Qur'an '*underneath which rivers flow*' (5:119 and elsewhere). Paradise is almost always

connected with running rivers and 'is better and more lasting' (37:17). This makes water more significant to Muslims than perhaps any other people in the world.

## Sea Water

In the language of the Qur'an and classical Arabic in general a large perennial river is called *bahr*, which is the same word used for sea. In a number of cases the Qur'an compares fresh and sea water, talking of them as *al-bahrayn* (the two *bahrs*). The majority of translators render this as 'the two seas' which is clearly confusing to the reader. Yusuf 'Ali opts for 'the two bodies of flowing water' which is preferable. Both of them are signs of Allah's power and grace. He subjected them to man for the common benefits he derives from them.

*From each you eat tender fish and bring up ornaments to wear, and you see the ships plough their courses through them, so that you may seek His bounty and may be thankful.* (35:12)

These benefits are mentioned many times in the Qur'an, and here again we usually find the key statement '*It is Allah/It is He who subjected the sea to you so that...*' (45:12). The benefit of using the sea for transportation is strongly emphasised in the Qur'an. It is a sign of honour:

*We have honoured the children of Adam; and provided them with transport on land and sea...* (12:70)

This is fitting for Muslims who are urged in the Qur'an to travel and seek the bounty of Allah (4:100; 73:20). Islam, which encourages travel, has set aside for the wayfarer a share in the *zakah*. The Qur'an reminds people:

*It is He Who conveys you on the land and the sea.* (10:22)

*Ships float and run on the sea by His command and He keeps the ships from sinking and the sky from falling, except by His own will* (22:65)

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The sea is 'kept filled' to perform its functions (52:6). It contains a prodigious volume of water:

*Say: if the waters of the sea were ink with which to write the words of my Lord, the sea would surely be drained before His words were finished*

(18:109)

This boundless sea, with all that it contains, is encompassed by Allah's knowledge:

*And He has knowledge of all that land and sea contain*  
(6:59)

He delivers men from darkness and harm on the sea when they call upon him humbly and in secret:

*Say: Who delivereth you from the darkness of the land and sea? Ye call upon Him humbly and in secret, (saying): If we are delivered from this (fear) we will be truly thankful.*  
(6:63)

*And when harm toucheth you upon the sea, those that ye call upon (for succour) fail, save for Him (alone).* (17:67)

The vital difference between fresh water and sea water is emphasised in the Qur'an:

*The two are not alike, the one fresh, sweet and pleasant to drink from while the other is salt and bitter* (35:12)

*Had he wished, he would have made (drinking-water) bitter* (56:65)

*The two kinds of water meet, yet He has set a barrier between them which they do not overrun.* (25:53)

Thus people may continue to have sea water and fresh water on earth.

## Language

It will have become clear from the earlier part of this article that the language the Qur'an employs in talking about water is full of liveliness and movement: the winds 'drive' the clouds; He 'sends down' water which 'revives' the earth, 'leads it through' springs and 'flowing' rivers, He 'splits' the earth and with water 'brings forth' plants and fruits, etc. The movement indicated is quick, using the conjunction of speed: the *fa* of *ta'qib* (following on the heels) and the conjunction of surprise: *idha* of *fujā'iyyah* (surprise) (30:48; 41:39). He sends down water and the earth 'becomes green on the morrow'. This is intensified by personification, the earth is 'barren and lifeless' and 'lowly' but when He sends down water on it 'it thrills and swells', the effects of the rain are 'the marks/prints of Allah's mercy':

*He sends the winds, harbingers pacing along close in front / between the two hands of His approaching mercy*  
(25:48)

*He sends water so that you may taste His mercy* (30:46)

*He sends down saving rain for them when they have lost all hope and spreads abroad His mercy* (42:28)

Such emotionally charged situations are used with fresh water and also when talking about the sea:

*It is He Who conveys you on the land and sea, until when you are in the ships, and they sail, carrying them in a pleasant wind, a violent wind overtakes them, and billows surge upon them from every side, and they fear that they are encompassed, then they pray to Allah with all fervour: Deliver us from this peril and we will be truly thankful*  
(10:22)

In discussing water in the Qur'an, the intensity and richness of the language is enhanced by the employment of *iltifat* which, in this case, involves a sudden shift, for a desired effect, from the singular to plural while continuing to refer to the same person. The shift occurs at a significant point in the sentence. Thus we read:

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*It is He who drives the winds, glad tidings heralding His mercy, and We send down pure water from the sky, that We may give life thereby to a dead land and provide drink to what We have created - cattle and men in great numbers. (25:48-9)*

The shift from the third person singular 'He' to the divine 'We' brings majesty and grace to the statement at the significant point of bringing the water down and giving life by it. In a verse that concerns Allah's power in giving various colours to fruits, mountains, men, beasts and cattle, the shift again occurs at the significant point in the context:

*Did you not see how Allah sent down water from the sky and We produced with it fruits of diverse hues... (36:27)*

In a verse on the perils of the sea, the shift - this time from 'you' to 'they' - occurs at the point when the ships sail away, to emphasise the fact that they are far away from any help:

*It is He Who conveys you on land and sea till when you are in the ships, and they sail with them in a pleasant wind, a violent wind overtakes them and billows surge upon them from every side... (36:27)*

Arab classical rhetoricians and critics in their enthusiasm about the feature of *iltifat* in Arabic described it as a sign of 'the bold nature of the Arabic language'. Actually, the statement should be corrected to read 'the bold nature of the Qur'anic language' because the majority and most significant examples such critics cited were from the Qur'an and there is no better place from which to understand the real function of *iltifat* than in the verses about water in the Qur'an.

Qur'anic statements about water are intense, very intimate to man, his food, drink, his survival and that of his animals, his plants and his crops. Sometimes, as we have seen, he is made to contemplate life without water, or with too much of it. Here, in contrast with the benign, blissful nature of water manifested in such adjectives as 'purifying' 'blissful' 'fresh' 'saving' 'mercy', man is reminded of the destructive side of water, when, instead of being sent down in due measure it is 'loosed', made to 'rise high', and 'billows surge from every direction'; 'when nothing could provide protection from the

swf (11:43); when:

*We opened the gates of heaven with pouring water and caused the earth to gush forth with springs (54:11)*

Man is regularly directed to 'look', 'observe', 'think' and 'contemplate'. On very numerous occasions, verses end with 'In this there are signs for people who think/ who hear/ who have sense'. 'Can they not see, will they not give thanks?' Thus water in the Qur'an is far from being a mere element: it is a subject of profound significance, and man's senses, emotions, and reason are constantly brought into play in discussing it.

### Purposes of Referring to Water

The theme of water in the Qur'an serves chiefly three purposes:

1. It is used as a proof of Allah's existence, unity and power.
2. This is indicated by such statements as 'of His signs', 'in this there are signs' 'It is Allah / He that';

*Who is it that sent down water for you from the sky with which We caused to bring forth joyous orchards? Try as you may you cannot cause such trees to grow, was it another god beside Allah? (27:60)*

*And consider the water that you drink. Was it you that brought it down from the cloud or We? (56:68-9)*

2. It is also used as a proof of Allah's care. This is always indicated by the prepositions 'for you', 'to you' which accompany statements about sending down, bringing forth, subjecting, 'for you and your flocks to enjoy', 'out of this mercy' and is implied in the contemplation of the opposite as already noted.

Water, with its effects, is further used in the Qur'an as a proof of the Resurrection. The unbelievers frequently argued in the Qur'an how, when they have died and been turned into 'dust

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and bones', can they be restored to life? (56:47). Among the answers the Qur'an gives to this type of logic is the effect of water on the dry and barren earth:

*He that gives it life will restore the dead to life'*  
(41:30)

*Likewise you shall be brought forth* (30:19)

In fact the Qur'an uses the very same verb for 'bringing forth' people out of their mother's womb (16:78) and 'bringing forth' plants from the earth (46:99) and 'bringing forth' people from the earth at the resurrection. Likewise the same verbal root is used in 'making every living thing from water', 'giving life to earth' and 'He who gave it life will give life to the dead'. Such a linguistic method enhances the pattern of persuasion used in the Qur'an.

The belief in Allah's existence, unity, power and care and in the resurrection are fundamental in Islam. Employing water to prove them gives it deeper significance and explains the frequent reference to it in the Qur'an.

## Guidance on the Use of Water

The Qur'an provides practical teaching about the use of water. Since it is Allah Who made from water every living thing, and it is He Who sent down fresh water from the sky out of His grace and mercy and gave it lodging in the earth, such a vital resource should not be monopolised by the powerful and privileged and kept from the poor. References in the Qur'an to water distribution 'provide the basis upon which much legal thought was formulated' in Islamic law.<sup>128</sup>

*Tell them that water is to be divided between them*  
(54:28)<sup>129</sup>

The Prophet said:

People are co-owners in three things: water fire and pasture.

(Hadith: Abu Dawud)

...Allah does not look with favour upon three kinds of people. One of these is ...a man who has surplus water near a path and denies the use of it to a wayfarer...

(Hadith: al-Bukhari)

He who withholds water in order to deny the use of pasture, Allah withholds from him His mercy on the day of resurrection.

(Hadith: Bukhari, Muslim, Tirmidhi, Abu Dawud Ahmad)

The following hadith exemplifies the virtue of sharing water, even with a dog:

While a man was walking, he became thirsty. He went to a well and drank from it. Afterwards he noticed a dog sniffing at the sand because of thirst. The man said to himself, 'This dog is suffering what I have suffered', so he filled his shoe with water and held it for the dog to drink. He then thanked Allah who bestowed upon him forgiveness for his sins. The Prophet's companions asked, 'Are we also rewarded for (kindness to) animals?' He answered, 'There is a reward for (kindness to) every living thing.'

(Hadith: al-Muwatta)

Muslim jurists in general recognise the urgent nature of man's need for water as well as the necessity to provide water for animals. A man who is thirsty is permitted to fight another, though without the use of any weapon, if the other has water and denies him the right to quench his thirst.<sup>130</sup> A tradition records that 'Umar made some owners of water pay the *diya* (blood money) for a man who died of thirst after they had refused his request for water.

In addition to the prohibition on monopoly of water, there is the prohibition on excess and wastefulness in using water:

*Eat and drink but do not be excessive; He loves not the extravagant.*  
(7:31)

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*Do not squander (your substance) wastefully, for the wasteful are the devil's brothers.* (17:26)

The Prophet said:

Excess in the use of water is forbidden, even if you have the resources of a whole river.

(*Hadith: Tirmidhi*)

It is forbidden, moreover, to pollute water. Out of His grace, Allah sent it down from the sky 'pure', 'to cleanse you with it' (25:47; 8:11). Thus in Islamic law it is forbidden to urinate in water. We have seen earlier that Qur'anic statements about water normally contain 'for you', 'to you', or 'so that you'. Statements about the sea and large rivers too are always accompanied by the purpose Allah intended for them. Thus:

*It is He Who subjected the sea to you, so that you may eat of its tender fish and bring up from it ornaments with which to adorn yourselves, and you see the ships ploughing their courses through it, that you may seek His bounty and render thanks to Him.* (16:34)

Polluting rivers and seas goes against the functions and purposes stated for them in the Qur'an; it is corruption:

*Corruption doth appear on land and sea because of (the evil) which men's hands have done.* (35:41)

Allah created the earth:

*And blessed it and measured therein its sustenance* (4:10)

Pollution that disturbs plant, animal, or sea life disturbs the balance in Allah's 'measurement' and is a long way from 'rendering thanks' for the blessing of water.

Thus in Islam, refraining from monopolising water, wasting or polluting it is not merely a matter of being wise, civilised, or showing good conduct as a citizen - it is, above that, an act of worship.

### Water in Islamic Society

It was natural that Qur'anic teaching should have a far-reaching effect

on Islamic life, shown in the attitude of the Muslims to water, whether related to this world or the world to come, in the rituals, the law, in Islamic art and architecture and in Islamic civilisation in general. We have already mentioned the stress on cleansing one's body and clothes which is a condition observed several times a day for one of the 'pillars' of Islam. It is no wonder that public baths became known, before the advent of modern civilisation, as an important feature of Islamic cities, recorded in great numbers in classical writings. Drinking fountains (*sabil*) also became an architectural feature of Islamic cities with calligraphic Qur'anic references to drinking in Paradise adorning their facades; so did watering places for animals. Religious endowments, with elaborate and exquisitely detailed deeds, many of which have survived, were made to ensure the continued maintenance of such institutions.<sup>131</sup> Traditional Islamic gardens, with water as an essential element, were inspired by the descriptions of Paradise in the Qur'an underneath whose trees 'rivers flow'<sup>132</sup>

From the Qur'an, Muslims learn that water is a sign of Allah's existence, unity, power and care. It is the essence of life, and sustenance; an instrument of cleanliness and beauty. It is not to be monopolised, wasted or polluted and it is an essential feature of the best that Muslims aspire to in the life to come.

## SACRED SCIENCE AND THE ENVIRONMENTAL CRISIS: AN ISLAMIC PERSPECTIVE

Seyyed Hossein Nasr

'O Lord, show us things as they really are.' (Hadith of the Prophet)

When one looks at the Islamic world today, one sees blatant signs of the environmental crisis in nearly every country from the air pollution of Cairo and Tehran to the erosion of the hills of Yemen and the deforestation of many areas of Malaysia and Bangladesh. Environmental problems seem to be present everywhere, especially in urban centres and also in many parts of the countryside, to a degree that one cannot distinguish the Islamic world from most other areas of the globe as far as acute environmental problems are concerned. If one were to study the situation only superficially, one could in fact claim, in the light of present-day conditions, that the Islamic view of nature could not have been different from that of the modern West which first thrust the environmental crisis upon the whole of mankind. But a deeper look will reveal an Islamic view of the environment very different from what has been prevalent in the West during the past few centuries. If that view has now become partly hidden, it is because of the onslaught of Western civilisation since the eighteenth century and the destruction of much of Islamic civilisation, due to both external and internal factors, although the Islamic religion itself has continued to flourish and remains strong.

In fact, the Islamic world is not totally Islamic today and much that is Islamic lies hidden behind the cover of Western cultural, scientific and technological ideas and practices emulated and aped to various degrees of perfection, or one should rather say imperfection, by Muslims during the past century and a half. The Islamic attitude toward the natural environment is no more manifest than the Buddhist

one in Japan or Taoist one in China, all as a result of the onslaught upon these lands of a secular science based upon power and domination over nature, and a technology which devours the natural world with no respect for the equilibrium of nature, a science and technology of Western origin which have now become nearly global, eclipsing for the most part what has remained of the sacred sciences in various non-Western civilisations.

Despite this situation, however, Islam continues to live as a powerful religious and spiritual force and its view of nature and the natural environment still has a hold upon the mind and soul of its adherents, especially in less modernised areas and also in some of the deeper attitudes toward nature. The role of this survival of the traditional view of nature can be seen in the refusal of Islamic society to surrender completely to the *dicta* of the machine despite the attempt of leaders of that world to introduce Western technology as much as and as soon as possible. This view is, therefore, significant for a global consideration of the environmental problem, not only because of its innate value but also because of its continuous influence upon Muslims, who comprise a fifth of the world's population.

### The Islamic View of Nature and the Environment

The Islamic view of the natural environment is furthermore of significance for the West itself since Islam shares with the West a religion of the Abrahamic family and the Greek heritage which played a major role in the history of both Western and Islamic science, in the first mostly through the agency of the second. The Islamic view of nature presents a precious reminder of a perspective mostly lost in the West today and based upon the sacred quality of nature in a universe created and sustained by the One God of Abraham to whom Jews and Christians also bow in prayer.

The Islamic view of the natural order of the environment, as everything else that is Islamic, has its roots in the Qur'an, the very Word of Allah, which is the central theophany of Islam.<sup>133</sup> The message of the Qur'an is in a sense a return to the primordial message of Allah to man. It addresses what is primordial in the inner nature of men and women; hence Islam is called the primordial religion (*al-din al-hanif*).<sup>134</sup> As the 'Primordial Scripture', the Qur'an addresses

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not only men and women but the whole of the cosmos. In a sense, nature participates in the Qur'anic revelation. Certain verses of the Qur'an address natural forms as well as human beings, while Allah calls non-human members of His creation, such as plants and animals, the sun and the stars, to bear witness in certain other verses. The Qur'an does not draw a clear line of demarcation between the natural and the supernatural, nor between the world of man and that of nature. The soul which is nourished and sustained by the Qur'an does not regard the world of nature as its natural enemy to be conquered and subdued but as an integral part of man's religious universe sharing in his earthly life and in a sense even in his ultimate destiny.

The cosmic dimension of the Qur'an was elaborated over the centuries by many Muslim sages who referred to the cosmic or ontological Qur'an (*al-Qur'an al-takwini*) as distinct from and complementing the composed or 'written' Qur'an (*al-Qur'an al-tadwini*).<sup>135</sup> They saw upon the face of every creature letters and words from the pages of the cosmic Qur'an which only the sage can read. They remained fully aware of the fact that the Qur'an refers to the phenomena of nature and events within the soul of man as *ayat* (literally signs or symbols), a term that is also used for the verses of the Qur'an.<sup>136</sup> They read the cosmic book, its chapters and verses, and saw the phenomena of nature as 'signs' of the Author of the book of nature. For them the forms of nature were literally *ayat Allah, vestigia Dei*, a concept that was certainly known to the traditional West before, with the advent of rationalism, symbols were turned into brute facts and the modern West set out to create a science to dominate over nature rather than to gain wisdom and joy from the contemplation of its forms.

The Qur'an depicts nature as being ultimately a theophany which both veils and reveals Allah. The forms of nature are so many masks that hide various Divine Qualities, while also revealing these same Qualities to those whose inner eye has not become blinded by the concupiscent ego and the centrifugal tendencies of the passionate soul.

In an even deeper sense, it can be claimed that according to the Islamic perspective, Allah Himself is 'the Ultimate Environment' which surrounds and encompasses man. It is of the utmost significance that in the Qur'an Allah is said to be All-Encompassing

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(*qad*), as in the verse, 'But to Allah belong all things in the heavens and on the earth: And He it is who encompasseth (muhit) all things' (2:22), and that the term *muhit* also means environment.<sup>137</sup> In reality, man is immersed in the Divine *Muhit* and is only unaware of it because of his own forgetfulness and negligence (*ghaflah*), which is the underlying sin of the soul, only to be overcome by remembrance (*taqwa*). To remember Allah is to see Him everywhere and to understand His reality as *Muhit*. The environmental crisis may in fact be said to have been caused by man's refusal to see Allah as the true environment which surrounds man and nourishes his life. The destruction of the environment is the result of modern man's attempt to view the natural environment as an ontologically independent order of reality, divorced from the Divine Environment without whose liberating grace it becomes stifled and dies. To remember Allah as *Muhit* is to remain aware of the sacred quality of nature, the reality of natural phenomena as signs (*ayat*) of Allah and the presence of the natural environment as an ambience permeated by the Divine Presence of that Reality which alone is the ultimate 'environment' from which we issue and to which we return.

The traditional Islamic view of the natural environment is based on this inextricable and permanent relation between what is today called the human and natural environments and the Divine Environment which sustains and permeates them. The Qur'an alludes in many verses to the unmanifested and the manifested worlds ('alam al-ghar wa'-shahada). The visible or manifested world is not an independent order of reality but a manifestation of a vastly greater world which transcends it and from which it issues. The visible world is like what one can observe around a camp fire during a dark desert night. The visible gradually recedes into the vast invisible which surrounds it and which is its veritable environment. Not only is the invisible an infinite ocean compared to which the visible is like a speck of dust, but it permeates the visible itself. It is in this way that the Divine Environment permeates the world of nature and of normal humanity, nourishing and sustaining them, being at once the origin (*al-mabda'*) and entelechy and end (*al-ma'ad*) of the manifested order.<sup>138</sup>

As a result of this view of nature as delineated in the Qur'an and accentuated by the *Hadith* and *Sunnah* of the Prophet, the traditional Muslim always harboured a great love for nature, which is a reflection

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(*Muhit*), as in the verse, 'But to Allah belong all things in the heavens and on the earth: And He it is who encompasseth (muhit) all things' (4:26), and that the term *muhit* also means environment.<sup>137</sup> In reality, man is immersed in the Divine *Muhit* and is only unaware of it because of his own forgetfulness and negligence (*ghaflah*), which is the underlying sin of the soul, only to be overcome by remembrance (*dhikr*). To remember Allah is to see Him everywhere and to understand His reality as *Muhit*. The environmental crisis may in fact be said to have been caused by man's refusal to see Allah as the true Environment which surrounds man and nourishes his life. The destruction of the environment is the result of modern man's attempt to view the natural environment as an ontologically independent order of reality, divorced from the Divine Environment without whose liberating grace it becomes stifled and dies. To remember Allah as *Muhit* is to remain aware of the sacred quality of nature, the reality of natural phenomena as signs (*ayat*) of Allah and the presence of the natural environment as an ambience permeated by the Divine Presence of that Reality which alone is the ultimate 'environment' from which we issue and to which we return.

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of paradisal realities here below. This love is reflected not only in Arabic, Persian and Turkish literature – not to speak of the literatures of other Islamic peoples from Swahili to Malay – but also in Islamic religious thought, where no clear distinction is made between what Western theology has come to call the natural and the supernatural. This love is also reflected in many pages of the works of Islamic philosophers, but finds its most profound and also universal expression in Sufi poetry. It was the Persian poet Sa'di who composed the famous verse,

I am joyous with the cosmos  
For the cosmos receives its joy from Him.  
I love the whole world, for the world belongs to Him.

It was another Sufi, this time the great folk poet of the Turkish language, Yunus Emre, who heard the invocation of Allah's Blessed name in the sound of flowing streams, which brought a recollection of celestial realities and so he sang,

The rivers all in Paradise  
Flow with the word Allah, Allah  
And ev'ry loving nightingale  
He sings and sings Allah, Allah

(Trans. A.M. Schimmel, *As Through a Veil*, [New York, 1982], p. 150.)

Muslim contemplatives and mystics have loved nature with such intensity<sup>139</sup> because they have been able to hear the prayer of all creatures of the natural world to Allah. According to the Qur'an, '*Nothing is, that does not proclaim His praise*' (17:44). This praise, which is also the prayer of all things, is the root of their very existence. Fallen man who has forgotten Allah has become deaf to this ubiquitous prayer as a result of this very act of forgetfulness. The sage, on the contrary, lives in remembrance of Allah (*dhikr Allah*) and as a result hears the prayers of flowers as they turn toward the sun and of the streams as they descend from hills toward the sea. His prayer has, in fact, become one with the prayers of the birds and the trees, of the mountains and the stars. He prays with them and they with him and in contemplating their forms not only as outwardness but as theophanies or as 'signs of Allah', he is strengthened in his own

recollection and remembrance of the One.

At its highest level, of course, this contemplative attitude towards nature and love for it is experienced only by the few who have realised the full possibilities of being human, but throughout the centuries it has percolated into the Islamic community as a whole. Traditional Islamic society has always been noted for its harmonious relationship with the natural environment and love for nature, to the extent that many a Christian critic of Islam has accused Muslims of being naturalistic and Islam of being devoid of the grace which is usually so wrenchingly separated and distinguished from nature in the mainstream of Christian theology.

This Islamic love of nature as manifesting the 'signs of Allah' and being impregnated with the Divine Presence must not be confused with naturalism as understood in Western philosophy and theology. Christianity, having been forced to combat the cosmolatry and rationalism of the ancient Mediterranean world, branded as naturalism both the illegitimate nature worship of the decadent forms of Greek and Roman religion and the very different concern and love for nature of northern Europeans such as the Celts, a love which nevertheless survived in a marginal manner after the Christianisation of Europe, as one can see in the works of Hildegard of Bingen or in early medieval Irish poems pertaining to nature. Now, one must never forget that the Islamic love for nature has nothing to do with the naturalism mathematized by the Church Fathers. Rather, it is much closer to the nature poetry of the Irish monks and the addresses to the sun and the moon by the patron saint of ecology, St Francis of Assisi. Or perhaps it should be said that it is he who, among all the great mediaeval sages, is the closest to the Islamic perspective as far as the love of nature is concerned. In any case, the Islamic love of nature and the natural environment and the emphasis upon the role of nature as a means to gain access to Allah's wisdom as manifested in His creation, do not in any sense imply the negation of transcendence or the neglect of the archetypal realities. On the contrary, on the highest level it means to understand fully the Qur'anic verse, '*Whithersoever ye turn, there is the Face of Allah*' (2:115). It means, therefore, to see Allah everywhere and to be fully aware of the Divine Environment which surrounds and permeates both the world of nature and the ambience of man.

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The Islamic teachings concerning nature and the environment cannot be fully understood without dealing with the Islamic conception of man, who has been always viewed in various traditional religions as the custodian of nature and who has now become its destroyer, having changed his role, thanks to modern civilisation, from the being who had descended from Heaven and who lived in harmony with the earth to a creature who considers himself as having ascended from below and who has now become the earth's most deadly predator and exterminator. Islam considers man as Allah's vicegerent (*al-khalifah*) on earth and Allah asserts explicitly in the Qur'an, '*I am setting on the earth a vicegerent (khalifah)*' (2:30). This quality of vicegerency is, moreover, complemented by that of servantship (*al-'ubudiyyah*) towards Allah. Man is Allah's servant ('abd Allah) and must obey Him accordingly. As 'abd Allah, he must be passive towards Allah and receptive to the grace that flows from the world above. As *khalifat Allah*, he must be active in the world, sustaining cosmic harmony and disseminating the grace for which he is the channel as a result of his being the central creature in the terrestrial order.<sup>140</sup>

### The Role of Man as Seen in Islam and the West

In the same way that Allah sustains and cares for the world, man as His vicegerent must nurture and care for the ambience in which he plays the central role. He cannot neglect the care of the natural world without betraying that 'trust' (*al-amana*) which he accepted when he bore witness to Allah's lordship in the pre-eternal covenant (*al-mithaq*), to which the Qur'an refers in the famous verse where Allah asks the descendants of Adam, 'Am I not your Lord?' They uttered, 'Yea we bear witness' (7:172).

To be human is to be aware of the responsibility which the state of vicegerency entails. Even when in the Qur'an it is stated that Allah has subjected (*sakhkhara*) nature to man as in the verse, 'Hast thou not seen how Allah has subjected to you all that is in the earth' (22:65), this does not mean the ordinary conquest of nature, as claimed by so many modern Muslims thirsty for the power which modern science bestows upon man. Rather, it means the dominion over things which man is allowed to exercise only on the condition that it is according to Allah's laws and precisely because he is Allah's vicegerent on earth,

and therefore given a power which ultimately belongs to Allah alone and not to man who is merely a creature born to journey through this earthly life and to return to Allah at the moment of death.

That is also why nothing is more dangerous for the natural environment than the practice of the power of vicegerency by a humanity which no longer accepts to be Allah's servant, obedient to His commands and laws. There is no more dangerous creature on earth than a *khalifat Allah* who no longer considers himself to be 'abd Allah and who therefore does not see himself as owing allegiance to a being beyond himself. Such a creature is able to possess a power of destruction that is truly Satanic in the sense that 'Satan is the ape of Allah', for such a human type wields, at least for a short time, a godlike but destructive dominion over the earth because this dominion is devoid of the care which Allah displays towards all His creatures and bereft of that love which runs through the arteries of the universe. As traditionally defined by Islam, man is seen as being given power even to the extent of finally causing corruption on earth as predicted in the Qur'an. But this power is seen in the traditional Islamic perspective to be limited in normal circumstances by the responsibilities which he bears not only towards Allah and other men and women, but also towards the whole of creation. The Divine Law (*al-Shari'ah*) is explicit in extending the religious duties of man to the natural order and the environment. One must not only feed the poor but also avoid polluting running water. It is pleasing in the eyes of Allah not only to be kind to one's parents, but also to plant trees and treat animals gently and with kindness. Even in the realm of the Divine Law, and without turning to the metaphysical significance of nature, one can see the close nexus created by Islam between man and the whole natural order. Nor could it be otherwise, for the primordial character of the Islamic revelation reinstates man and the cosmos in a state of unity, harmony and complementarity, reaffirming man's inner bond to the whole of creation, which shares the Qur'anic revelation in the deepest sense with man.

There is so much talk today of human rights that it is necessary to mention here the basic truth that according to the Islamic perspective responsibilities precede rights. Man has no rights of his own independent of Allah, whether these rights be over nature or even over

himself since he is not the creator of his own being. Man is not in fact capable of creating anything from nothing. The power of *fiat lux* belongs to Allah alone. What rights man does possess are given to him by Allah as a consequence of his having accepted the covenant with Allah and fulfilled his responsibilities as Allah's vicegerent on earth.

The Islamic attitude towards man differs profoundly not so much from traditional Jewish and Christian ones, although even here there are some notable differences, as from post-mediaeval forms of humanism, to which much of the later religious thought in the West gradually succumbed. Islam sees Allah alone as being absolute. One of the meanings of the testimony of Islam (*la ilaha illa-Llah*) is that there is no absolute unless it is the Absolute. Man is seen as a creature who, as a theomorphic being, reflects all of Allah's Names and Qualities in a direct and central fashion, but he is not absolute in himself, especially in his transient earthly state. In fact whatever positive qualities man possesses come from Allah. That is why in the Qur'an it is asserted '*Allah is the rich and ye are the poor*' (47:38). Man's greatest glory lies in fact in the realisation of this poverty, through which alone he is able to reach understanding of the Absolute.

In contrast, since the advent of Renaissance humanism, Western civilisation has absolutised earthly man. While depriving man of his centre and creating a veritable centreless culture and art, Western humanism has sought to bestow upon this centreless humanity the quality of absoluteness.<sup>141</sup> It is this purely earthly science based upon the domination and conquest of nature, which sees nature as its enemy and who continues to rape and destroy the natural environment always in the name of the rights of man, which are seen by him to be absolute. It is this terrestrial man, now absolutised, who destroys vast forests in the name of immediate economic welfare, without thinking for a moment of the consequences of such action for future generations of men or for other creatures of this world. It is such a creature who, in seeing his earthly life as being absolute, tries to prolong it at all costs, creating a medicine which has produced both wonders and horrors, including the destruction of the ecological balance through human overpopulation. Neither Allah nor nature have any rights in the eyes of a humanity that sees itself as absolute, even when talking about man being an insignificant observer on a small planet on the periphery of a

minor galaxy, as if all this superficial humanity were not based upon the absolutisation of the sense-experience and rational powers of earthly man.

Now Islam has always stood strongly opposed to this absolutisation of what one might call the Promethean and Titanic man. It has never permitted the glorification of man at the expense of either Allah or His creation. Nothing is more detestable to traditional Muslim sensibilities than some of the Titanic art of the Renaissance created for the glorification of a humanity in rebellion against Heaven. If modern science and with it a civilisation which gave and still gives itself absolute right of domination over the earth and even the heavens did not come into being in the Islamic world, it was not because of the lack of mathematical or astronomical knowledge. Rather, it was because the Islamic perspective excluded the possibility of the deification of earthly man or of the total secularisation of nature. In Islamic eyes, only the Absolute is absolute.

The consequence of this perspective for the relation between man and the environment has been immense. In the traditional Islamic world, since the human state was never absolutised, man's rights were never made absolute in total forgetfulness of the rights of Allah and also of His other creatures. Modern Western man, in contrast to the traditional Muslim, owes nothing to anyone or anything. Nor does he or she feel responsible to any other being beyond the human. In contrast, the traditional Muslim or *homo islamicus* has always lived in awareness of the rights of Allah and the rights of others, which includes the non-human realm. He has remained aware of his responsibility to Allah and also responsibility for His creatures. Islam has been always strongly opposed to rationalism while being rational, to naturalism while being concerned with human beings and their entelechy in the deepest manner possible. These attitudes, moreover, exercised an immense influence upon the Islamic attitudes towards nature and the natural environment, especially until the domination of the Islamic world by the West.

Many secularists in the West today blame what is now called the Judaeo-Christian tradition, to which Islam is also added in this context and not elsewhere, for the present ecological crisis, forgetting the fact that neither Christian Armenia nor Ethiopia nor even Christian Eastern

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Europe gave rise to that science and technology, which in the hands of secular man has led to the devastation of the globe, and that therefore other factors must have been involved. Moreover, it must first of all be remembered that if one chooses not to speak of Judaism and Christianity but of the Judaeo-Christian tradition, one should speak of the Judaeo-Christian-Islamic tradition, which would thus include the three members of the Abrahamic family of religions. Secondly, one must remember that each of the religions of the Abrahamic family has its particular doctrinal and theological emphasis and spiritual contour. As far as the question of the spiritual and metaphysical significance of nature is concerned, Islam has placed greater emphasis upon it than the mainstream theological tradition of Western Christianity and has always emphasised and preserved even to this day teachings which have been either forgotten or marginalised in religious thought in the West.

This does not mean, however, that Judaism or Christianity are in themselves responsible for the environmental crisis. Moreover, this marginalisation, combined with the acceptance of the secular view of the cosmos and even condonement, if not out and out approval of the rape of nature by secularised man, was the result of Christianity's battle for five centuries with humanism, rationalism, and secularism, although Western Christianity did fail to emphasise the spiritual significance of nature in its mainstream theology even before the Renaissance. The result of this acquiescence has been the success of the forces of secularism, and the science and technology which are based upon it, in depleting nature of its sacred quality and causing the forgetfulness of that metaphysics which alone can explain who man is, why his rights are limited and why he is the bridge between heaven and earth, called by his human vocation to be custodian of the earth and its creatures.

### **Why is the Islamic view not more evident?**

It must now be asked that if the traditional teachings of Islam concerning the natural order as outlined above are still alive, why are they not more evident in the voices from the Islamic world which have been and are heard in the West, nor more effective in the practical realm in averting ecological disasters than in other parts of the globe?

Let us first of all turn to the voices from the Islamic world which the West has heard during the past century and a half and still hears, and through which it interprets the Islamic view concerning the natural environment.

During the last century and a half, two voices from the Islamic world have been most vociferous and easily heard in the West: that of the so-called fundamentalist reformers and that of the 'modernists'.<sup>142</sup> The first includes such schools as the Wahhabis and Salafis who have stood opposed to the West and defended the sacrosanct character of the Divine Law, seeking to re-establish a society in which this Law would be promulgated thoroughly and completely. At first, its proponents were against Western technology, as can be seen in the attitude of the Wahhabi-supported Saudis in Arabia during the first decades of this century. But this opposition was more juridical than intellectual. These movements were not usually concerned with the traditional Islamic philosophy of nature and dealt with the environment according to Shari'ite norms but without the critical knowledge of Western science and technology necessary to realise the catastrophic effects of modern science upon the religiously inspired views of nature, and of modern technology upon the environment. Furthermore, they were too engrossed in combating Western colonial influences and in what they considered to be 'cleansing' Islamic society of alien accretions to be much concerned with the natural environment.

It was this lack of knowledge and critical judgment which led to an open espousal of Western science and technology by later followers of this very group during the second half of this century. Again this can be seen in Saudi Arabia, which began to embrace rapid industrialisation from the 1950s onward while maintaining its close links with Wahhabism. Concern with the environment there did not in fact become an issue until very recently.

The second voice is that of the 'modernists' who have expressed a staunch defence of Western science and technology from the early nineteenth century. The defeat of Egypt by Napoleon in 1798, followed by the defeat of the Ottomans and the Persians by European powers and the British conquest of India in the early decades of the nineteenth century, led to a crisis within the Islamic world which was not only political but also cultural and religious. As political leaders

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like Muhammad Ali of Egypt sent students to Europe to master Western military arts, modernist thinkers began not only to accept but to practically idolise Western science and technology, which they saw as the secret of the West's power. From Sayyid Ahmad Khan in India to Muhammad Abduh in Egypt, from Zia Gökalp in Turkey to Seyyed Hasan Taqizadeh in Persia, modernists stressed the importance of Western science and technology which could do no wrong and which would lead to the material and even spiritual happiness of Muslims. A figure such as Jamal al-Din al-Afghani simply equated Western science with Islamic science, to which it owes a great deal historically but whose philosophical framework Western science does not accept at all to say the least. For over a century, teachers in classrooms and even preachers from pulpits of mosques repeated this modernist view, extolling Western science and technology and considering its mastery as practically a religious duty. If there were a few dissenting voices here and there, such as Sayyid Ahmad Kasrawi in Persia, who openly criticised Western science and technology, they were brushed aside by the modernists as being simply obscurantists.<sup>143</sup>

Meanwhile, a third voice, that of traditional Islam in its sapiential as well as juridical dimension, survived but was hardly heard in the West until quite recently. Poets still expressed the traditional love of nature and those devoted to the inner dimension of Islam still studied and continue to study the cosmos as a book to be deciphered and understood by penetrating into the inner meaning of its symbols. But until recently the West hardly heard this voice. Occasionally a poet such as Muhammad Iqbal would become well known in the West, but he would not be the type of poet to sing primarily of the love of nature. In his case, he was too deeply engrossed in the current problems of the Islamic community and too profoundly influenced by nineteenth century European philosophy to emphasise the science of nature which leads to the contemplation of nature and spiritual perfection rather than dominion and power over nature with the aim of reaping from it all that one can to satiate the unending demands of a purely earthly man. Yet, even in his case, here and there in his poetry, rather than his prose, one can gain a glimpse of that attitude towards nature which Sufis and Islamic philosophers have cultivated over the centuries on the basis of the clear message of the Qur'an.

In any case the voice of traditional Islam in its sapiential dimension,

wherein is to be found the Islamic doctrine of the ultimate meaning of nature and the natural environment, continued to resonate within the Islamic world, although it was now no longer the dominating voice. Nor was it heard by the West, which devoted its study of the Islamic world until recently almost completely to the fundamentalist reformers and modernists, two opposing groups who during the past few decades have disagreed on many issues but who have met eye to eye in more recent times in their blind acceptance of modern science and technology and their total neglect of the traditional Islamic views concerning science and nature. As the ecological crisis has become a major global issue, however, the voice of traditional Islam has begun to be heard ever more clearly and loudly. It is this voice which speaks of the millennial wisdom of the attitudes of Islam and its science toward the natural environment and which insists that the role of religion in the present environmental crisis is not only ethical but also intellectual. It provides an in-depth critique of the totalitarian and monopolistic contention of modern science to be the only valid form of knowledge of the natural domain.

As stated already, there are also practical reasons why the Islamic world has not been more successful on the operational level in avoiding an environmental crisis, despite the religiously positive and caring attitude of Islam towards nature. These reasons are related to the global domination of the West and the need felt not only by Muslims but by what is wrongly called 'Third World countries' to overcome the economic consequences of this domination. This need cuts across several continents and can be seen in Islamic Egypt and Buddhist Thailand, Hindu India and Christian Ethiopia. This worldwide need, added to common human nature which seeks everywhere the forbidden fruit of Faustian science, has caused Shinto-Buddhist Japan, with its remarkable appreciation of nature, and the Navajo nation, with its incredible spiritual insight into the significance of natural forms, to suffer almost as much, from the destruction of their natural ambience, as formerly Communist and now Catholic Poland or half-secularised and half-Christian northern New Jersey. The fact that Cairo or Karachi suffer from environmental decay does not negate the traditional Islamic doctrines concerning the love and appreciation of nature any more than does the pollution of Tokyo negate the spiritual significance of the Zen gardens of Kyoto.

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The economic and political factors which have prevented Muslims from paying greater attention to their own traditional teachings concerning the environment are very complex and need a separate treatment. Suffice it to say here that when the pollution of the Hudson River can be measured in the Azores, when every American born will use over a hundred times more raw materials than a Muslim from Bangladesh, when the West refuses to put its own house in order through a sane energy and raw materials policy and instead invades another part of the globe to preserve 'the Western way of life', which in this context means the wasteful use of energy, without thought of the consequences of its actions for future generations, then it should not be too difficult to understand why the environmental issue does not possess much priority in the Islamic world at the present moment.

Furthermore, there is the question of innovation and reception of a Western technology, which until now has been very destructive of the natural environment. The Islamic world is on the receiving end of an ever-changing technology that guarantees its domination through constant innovation. There is no breathing space to adapt an existing technology with the minimum environmental impact without economic pressure which is simply unbearable for most Islamic countries. If 'catching up' with the West, which is the goal of many Muslim governments, were possible, such an achievement would simply expand the circle of the virulent and aggressive destruction of the environment caused by such technology, as the cases of Japan, Korea and Taiwan bear out. Such countries have certainly not become ecologically safer havens since joining the industrial world. One wonders what would happen to the world's biosphere were people from Nigeria to Indonesia to spend the same amount of energy and use the same amount of raw materials as citizens of the so-called advanced countries!

On the practical level there is finally one other important factor to mention as far as the Islamic world is concerned. The colonial domination of the West not only brought about economic exploitation and introduced a second-rate Western technology into the Islamic world. It also resulted in many Muslim countries discarding much of the Divine Law or *al-Shari'ah*, with its numerous teachings concerning responsibility towards the natural environment, in favour of secular Belgian, French or British codes which had little to say

concerning nature. And even if laws relating to the environment were passed in the framework of the new secular laws imported from the West, these did not carry any religious weight and remained divorced from ethical considerations whose sole origin and source for Muslims is the Islamic revelation. This change in the significance of law in many Islamic lands, added to the migration of a large number of people from the countryside to urban areas with its concomitant cultural dislocation, poses a major obstacle to propagating the traditional Islamic teachings concerning the environment among certain groups in many Muslim cities. The callousness toward domestic animals and trees in many of the large Middle Eastern cities bears evidence of the existence of these factors to which great poverty must be added in many areas. The problem of the preservation of the natural environment seems simply too far removed from the immediate concerns of life for those influenced by these factors, while many political leaders simply relegate it to a position of secondary importance and consider it to be simply a Western problem despite the blatant evidence to the contrary.

Of course, the environmental crisis is not only Western but global. And although the Muslims for the most part endanger themselves in their heedless attitude towards the environment, while the highly industrialised countries threaten the ecology of the whole globe, it is absolutely essential for the Islamic world to face this issue in a most serious manner.<sup>144</sup> It is also important for everyone to realise that since the environmental crisis is global, it requires global attention. The Islamic world must do its utmost to bring its rich intellectual and ethical tradition to bear upon this problem, as the West must realise that there is a wisdom within the Islamic tradition concerning nature and the natural environment which can be of great significance for those in the West who are in quest of reformulating a theology of nature.

**Islam's Solution to a Global Crisis**

At this point, it is necessary to point to some of the elements that distinguish the situation of Islam today from that of the West as far as the environmental crisis is concerned. In the West for several centuries religious faith has weakened and theology has surrendered

The economic and political factors which have prevented Muslims from paying greater attention to their own traditional teachings concerning the environment are very complex and need a separate treatment. Suffice it to say here that when the pollution of the Hudson River can be measured in the Azores, when every American born will use over a hundred times more raw materials than a Muslim from Bangladesh, when the West refuses to put its own house in order through a sane energy and raw materials policy and instead invades another part of the globe to preserve 'the Western way of life', which in this context means the wasteful use of energy, without thought of the consequences of its actions for future generations, then it should not be too difficult to understand why the environmental issue does not possess much priority in the Islamic world at the present moment.

Furthermore, there is the question of innovation and reception of a Western technology, which until now has been very destructive of the natural environment. The Islamic world is on the receiving end of an ever-changing technology that guarantees its domination through constant innovation. There is no breathing space to adapt an existing technology with the minimum environmental impact without economic pressure which is simply unbearable for most Islamic countries. If 'catching up' with the West, which is the goal of many Muslim governments, were possible, such an achievement would simply expand the circle of the virulent and aggressive destruction of the environment caused by such technology, as the cases of Japan, Korea and Taiwan bear out. Such countries have certainly not become ecologically safer havens since joining the industrial world. One wonders what would happen to the world's biosphere were people from Nigeria to Indonesia to spend the same amount of energy and use the same amount of raw materials as citizens of the so-called advanced countries!

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the realm of nature to science and shied away from any serious concern with the sacral dimension of natural forms and phenomena. There is therefore the need to dethrone the humanistic conception of man which makes of him a demigod who determines the value and norm of things and who looks upon all of nature from only the point of view of his self-interest. This dethronement means a death of the type of man who almost instinctively views nature as the enemy to be conquered and the birth of the man who respects and loves nature and receives spiritual as well as physical sustenance from it, while also giving something of himself to the multifarious species of the natural kingdom. Anything short of this death and rebirth of modern Western man is cosmetic as far as the environmental crisis is concerned and no amount of clever engineering based on the current secular science of the natural order will be able to avoid the catastrophe created by the applications of this science.

This task is an extremely difficult one, seeing how deeply alienated from nature as well as from the supernatural source of the natural order is the psyche and mind of secularised Western man. But there is a compensation in the fact that the forces with which the religious and spiritual elements in the West have to contend come for the most part from within Western civilisation itself and not from outside, the economic and now technological challenge of Japan being the only exception.

By contrast, in the Islamic world, the origin of the technological problems bearing upon the environment is to be sought outside that world. The intellectual and spiritual leaders of the Islamic world must deal not only with their own problems but with ever continuing challenges which originate beyond their borders. There are, however, also certain advantages in the Islamic situation. There, religion is still very strong and one can appeal more easily to the people's religious sensibilities in seeking to solve the environmental crisis. Moreover, what would be called a theology of nature in Christian terms has never been forgotten in Islam; nor has the sacred view of the cosmos been totally replaced by a view based upon a purely quantitative science, as has occurred in the West. Finally, the ethical dimension of life as grounded in revelation is still strong among Muslims and can be appealed to more easily than is the case of many but of course not all sectors of Western society. The task of saving the natural order from

that humanity which has lost its vision of who man is and has thus become useless from a spiritual point of view is daunting in both worlds, but it is a task which must be carried out if human life is to even continue let alone to have a qualitative dimension.

### Plans into Action

In conclusion it is necessary to mention what it is, in practical terms, that the Islamic world must do in the face of the devastating environmental crisis. The Islamic world must carry out two extensive programs despite all the obstacles placed before it by external factors.<sup>145</sup> The first concerns formulating and making clearly known in a contemporary language the perennial wisdom of Islam concerning the natural order, its religious significance and intimate relation to every phase of man's life in this world. This program must of necessity include a critical appraisal of both modern science and scientism as well as the significance of traditional Islamic science not only as part of the Western history of science but as an integral part of the Islamic intellectual tradition.<sup>146</sup>

The second program is to expand the awareness of *Shari'ite* teachings concerning ethical treatment of the natural environment and apply them whenever necessary according to the principle of the *Shari'ah* itself. In addition to passing laws of a civil nature against acts of pollution similar to what is done in the West, Islamic countries must bring out the *Shari'ite* injunctions concerning the care for nature and compassion towards animals and plants, so that environmental laws will be seen by Muslims to be impregnated with religious significance. The ethical treatment of the environment in the Islamic world cannot take place without emphasis upon the teachings of the Divine Law and hence the ethical and religious consequences for the soul of man if he treats the natural environment with impunity and seeks simply to rape it with unbridled ferocity.

In traditional times there existed not one but several humanities, each dominated by a religious and spiritual norm which could be called 'the Presiding Idea' of the civilisation in question. Religions remained impervious to other universes of religious discourse with exceptions which only proved the rule.<sup>147</sup>

Today the boundaries of those traditional universes have been

broken and there is need for them to understand each other and to reach a harmony which is in fact possible only in the 'Divine Stratosphere'. Meanwhile, however, the members of these different human collectivities have become nearly all participants, some more actively than others, in the destruction of the earth. It is, therefore, essential for those who speak for religion and the world of the Spirit, to collaborate and apply that inner unity and harmony which binds them together to the terrestrial realm and the question of saving the planet from a humanity in rebellion against both heaven and earth. The person who speaks for the life of the Spirit today cannot remain indifferent to the destruction of that primordial cathedral which is virgin nature nor maintain silence concerning the harm that man does to himself as an immortal being by absolutising the 'kingdom of man' and as a consequence brutalising and destroying everything else in the name of the earthly welfare of members of that kingdom.

Islam certainly has its share of responsibility in drawing the attention of its own adherents as well as the world at large to the spiritual significance of nature and the necessity to live in peace and harmony with the rest of Allah's creation. The Islamic tradition is particularly rich in preserving to this day its sacred sciences, a sapiential knowledge combined with a love of the natural environment, a metaphysics of nature which unveils her role as the grand book in which the symbols of the world of Divine Majesty and Beauty are engraved. It also possesses a system of ethics, rooted in the revelation and bound to the Divine Law, which concerns the responsibilities and duties of man towards the non-human realms of the created order. It is incumbent upon Muslims to resuscitate both of these dimensions of their tradition in a contemporary language which can awaken and lead men and women to a greater awareness of the spiritual significance of the natural world and the dire consequences of its destruction.

It is also the duty of those who speak for traditional Islam to carry out a dialogue with followers of other religions on an issue which concerns men and women everywhere. By sharing the wisdom of their tradition with others, they can contribute a great deal not only to the Islamic world itself as it struggles with the consequences of the environmental crisis, but to the whole of humanity. As the sun shines upon all men and women from east to west and the night stars reveal their mysterious beauty to those with eyes to see whether they behold

them in Japan, India, Arabia or America, so does the wisdom concerning nature and the compassionate care for nature as taught by various religions belong to human beings wherever they might be, as long as they are blessed with the gift of appreciation of the beauty of the rose and the song of the nightingale. The Qur'an asserts that '*to Allah belong the East and the West*' (2:115). This statement possesses many levels of meaning, one of which is that where the sun rises and where it sets, where forests cover the land and where sand dunes rove over empty spaces, where majestic mountains touch the void of heaven and where deep blue waters reflect the Divine Infinitude, all belong to Allah and are hence interrelated. The destruction of one part of creation affects other parts in ways that the science of today has not been able to fathom. In such an interdependent natural environment in which all human beings live, it is for men and women everywhere to unite, not in an agnostic humanism which kills the divine in them,<sup>148</sup> and so veils the reflection of the divine in nature, but in awareness of the one God, Allah, who manifests His power in different ways in the vast and complex ocean of humanity.

To rediscover the divine and its reflection in oneself, is the first essential step. To see the reflection of the divine in the world of nature is its natural consequence. Man cannot save the natural environment except by rediscovering the nexus between the Supreme Artisan and nature, His creation, and becoming once again aware of the sacred quality of His works. And man cannot gain such an awareness of the sacred aspect of nature without discovering the sacred within himself and ultimately the Sacred as such. The solution of the environmental crisis cannot come but from the cure of the spiritual malaise of modern man and the rediscovery of Allah's attributes; and Allah, being compassionate, always gives to those open and receptive of His life-giving bounty. The bounties of nature and Allah's generosity to man are there, proofs of this reality, for despite all that man has done to destroy nature, it is still alive and reflects on its own ontological level the love and compassion, the wisdom and the power which belong ultimately to the realm of Allah. And in this crisis of unprecedented proportions, it is nature as Allah's primordial creation that will have the final say.

## PAGE NOTES

1 Markham and others 1993, p.133

2 Tofler 1971, p. 41

3 Adams 1949, pp. 265-311

4 Exponential curves follow the law of squares. In order to give equispace to the last decade as well as the last century, Henry Adams constructed the time base line of his graph on a logarithmic scale. He was thus 'able to stretch his curves that came progressively in the most recent times' (Calder and Amirsadeghi 1983, p. 11 and see also Adams 1949, p. 292). These graphs show how after millennia after millennia of very gradual movement, history exploded from about the sixteenth century.

5 Adams 1949, p.303

6 Calder and Amirsadeghi 1983, p.13

7 Frost 1992, p.32

8 Zohar 1991, p.2

9 Bewley 1992, p. 22

10 Zohar 1991, p.11

11 Khalid 1993, pp 6,7

12 de Mare 1983, p. 68

13 Orr 1989, p.15

14 Orr 1989, p.15

15 Benham 1961, p. 426

16 Anderton 1991, pp. 355-6

17 quoted in de Mare 1983, p. 68

18 quoted in Sampson, 1988, p. 29

19 quoted in Mumford 1970, p.78

20 Calder and Amirsadeghi 1983, p. 29

21 Calder and Amirsadeghi 1983, p. 30

22 Hadith: *Sahih Muslim*

23 Muslim, *Sahih Muslim bi-sharb an-Nawawi*, ed. 'Abd al-Mu'ti Amin Qal'aji (Cairo: Dar al-Ghad al-'Arabi, 1407-10/1987-90), VIII: 78 (no. 6814)[= K. ar-Riqaq, bab akthar ahl al-janna al-fuqara' ... etc];

at-Tirmidhi, *Sahih (Bilaq, 1292 [1875])*, II: 30 [= K. al-Fitan, bab ma ja'a ma akhbara an-nabi salla-lahu 'alayhi wa-sallam ashabahu bi-ma huwa ka'in ... etc]; Ibn Majah, *Sunan*, ed. Muhammad Fu'ad 'abd al-Baqi (Dar Ihya' at-Turath al-'Arabi, n.pl., n.d.), II: 1325 (no. 4000) [= K. al-Fitan, bab fitnat an-nisa']; Ahmad Ibn Hanbal, *Musnad* (Cairo: al-Matba'a al-Maymaniyya, 1313 [1895]), III: 19, 61, also 7.

24 In Q 2: 30 Allah says, referring to Adam, 'I am going to put a caliph on the earth'

25 See Q 2: 29 'He created for you everything that is on the earth'; cf. also Q 55: 10: 'And the earth He placed for people.'

26 This idea of reflection and gratitude leading to true worship is also particularly evident in Surat an-Nahl (see Q 16: 11-14, 65-9, 71-2, 78-83).

27 For a brief survey of these, see Y. Dutton, 'Natural Resources in Islam', in *Islam and Ecology*, ed. Fazlun Khalid with Joanne O'Brien (London: Cassell, 1992), pp. 51-67. For more specific studies on certain of these topics, see, for example: O. Llewellyn, 'Desert Reclamation in Islamic Law', *The Muslim Scientist*, XI, (1982), pp. 9-29) [reprinted in an edited version in Khalid and O'Brien (eds.), *Islam and Ecology*, pp. 87-97]; J.C. Wilkinson, 'Islamic Water Law with Special Reference to Oasis Settlement', *Journal of Arid Environments*, 1 (1978), pp. 87-96; J. Grainger and A. Ganadilly, 'Hemas: an Investigation into a Traditional Conservation Ethic in Saudi Arabia', *Journal of the Saudi Natural History Society*, II/6 (July 1986), pp. 28-32; H. Jungius, 'The Role of Indigenous Flora and Fauna in Rangeland Management Systems of the Arid Zones in Western Asia', *Journal of Arid Environments*, VI (1983), pp. 75-85.

28 For this hadith, see Abu Dawud, *Sunan*, on the margin of az-Zurqani, *Sharh Muwatta' al-Imam Malik* (Cairo: al-Matba'a al-Khayriyya, 1310 [1892/93]), III: 194-5 [= K. al-Buyi', bab fi man' al-ma']; Ibn Majah, *Sunan*, II: 826 (no. 2472) [= K. ar-Ruhin, bab al-Muslimina shuraka' fi thalath]; Ibn Hanbal, *Musnad*, V: 364.

29 See Muslim, *Sahih Muslim bi-sharb an-Nawawi*, VI: 442-4 [= K. as-Sayd, bab al-amr bi-ihsan adh-dhabh ... etc]; also, an-Nawawi, *Sharh al-arba'un an-Nawawiyya*, ed. Louis Pouzet (Beirut: Dar al-Mashriq, 1982), p. 37 (Arabic text; hadith no. 17).

30 For this hadith, see, for example, Malik, *al-Muwatta* (Cairo: Matba'at al-Halabi wa-Awladihi, 1349 [1930]), II: 224 [= K. al-Jami', jami' ma ja'a fi at-ta'am wa-sh-sharab]; al-Bukhari, *Sahih* (Arabic Text with English translation by Muhammad Muhsin Khan,

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Lahore: Kazi Publications, 1979), III: 323, 286, VIII: 25 [=K. al-musaqat, bab fadal saqy al-ma'; K. al-Muzalim, bab al-abar 'ala l-turuq; K. al-Adab, bab rahmat an-nas wa-l-baha'im]: Muslim, Sahih, VII: 185 [= K. al-Hayawan, bab fadl saqy al-baha'im ... etc.].

31 See Muslim, *Sahih*, VII: 179 [K. al-Hayawan, *bab istihbab qatl al-wazagh*].

32 See Malik, *Muwatta'*, II: 122 [= K. al-aqdiya, *bab al-qada' fi l-marfiq*].

33 This is the reasoning behind the Maliki, i.e. Madinan, judgements on *zakah*. Although the reasoning of the other legal schools (*madhhabs*) is somewhat different in detail, the resulting judgements are nevertheless broadly similar.

34 A *wasq* is a measure equal to 60 *sa's*. One *sa'* is equal to four *mudds*, a *mudd* being broadly defined as the amount that can be held in an average person's cupped hands. Whatever this amount might actually be according to this definition, in practice a *mudd* is regarded as 1 1/3 *Baghdadi ratls*, with one *ratl* being variously equated with either 128 4/7 *Makkan dirhams*, which equals 397.26 gm, or 130 *dirhams*, which equals 401.674 gm, i.e. approximately 400 gm. One *sa'*, which is  $4 \times 1\frac{1}{3} = 5\frac{1}{3}$  *ratls*, is therefore approximately equal to  $5\frac{1}{3} \times 400$  gm = 2.13 kg. One *wasq* ( $60 \times 5\frac{1}{3} = 320$  *ratls*), is approximately equal to 128 kg, and five *wasqs* ( $5 \times 320 = 1,600$  *ratls*), or 300 *sa's*, is approximately equal to 640 kg. (For these equivalences, see *Encyclopaedia of Islam* [2nd edn. Leiden / London: E.J. Brill / Luzac & Co., 1960-], VI: 117 ff; also al-Khirshi, *Sharh Mukhtasar Khalil* [Cairo: al-Matba'a al Khayriyya, 1307-8 (1890-1)], II: 71-2, 132).

35 Following the monetary reforms of the caliph 'Abd al-Malik in the year 79/698-9, the dinar was standardised at the equivalent of 4.25 gms and the dirham at 7/10 of that, i.e. 2.97 gms (see *Encyclopaedia of Islam* (2nd edition, Leiden/London: E.J. Brill/Luzac & Co., 1960-), II: 297, 319). 20 dinars is thus equivalent to  $20 \times 4.25$  gms = 85 gms, and 200 dirhams is equivalent to  $200 \times 2.97$  gms = 594 gms. Since 1 gm = 15.432 troy grains, and there are 480 troy grains to the troy ounce, the *nisab* for gold (85 gms) is  $(15.432 \times 85) \div 480 = 2.73275$  troy ounces, which, at current prices of £269 (\$405) per troy ounce, is worth £735 (\$1107); and the *nisab* for silver (594 gms) is  $(15.432 \times 594) \div 480 = 19.0971$  troy ounces, which, at current prices of £3.66 (\$5.51) per troy ounce, is worth £70 (\$105).

36 See al-Bukhari, *Sahih* (Arabic text with English translation by Muhammad Muhsin Khan, Lahore: Kazi Publications, 1979), IX:

286-7 [= K. al-iman, *bab al-iqtida' bi-sunan rasuli llah salsa llah 'alayhi wa-sallama ...*]; Muslim, *Sahih*, I: 455 [= K. al-iman, *bab al-amr bi-qital an-nas hatta yaqili «la ilaha illa llah ...»*].

37 See Abu Bakr ibn al-'Arabi, *Ahkam al-Qur'an*, ed. 'Ali Muhammad al-Bajawi (Cairo: Dar Ihya' al-Kutub al-l'arabiyya, 1376/1957), I: 242.

38 See Umar Vadillo, *Fatwa on Paper-Money* (Granada: Madinah Press, 1991), p. 15.

39 See Ibn Majah, *Sunan*, II: 764 (no. 2274) [= K. at-Tijarat, *bab at-taghliz fi r-riba*]. Cf. al-Qurtubi, *ahkam al-Qur'an* (Cairo: Matba'at Dar al-Kutub al-Misriyya, 1935-50), III: 364, where the author transmits one report in which *riba* is described as thirty six times worse than *zina*, and another in which it is described as consisting of ninety-nine wrong actions, the least of which is like a man having intercourse with his mother.

40 For these judgements, and further details about them, see, for example, at-Tabari, *Jami' al-bayan fi tafsir al-Qur'an* (Cairo: al-Matba'a al-Maymaniyya, 1321 [1903]), III: 66-7; an-Nisaburi, *Tafsir ghara'ib al-Qur'an wa-ragha'ib al-furqan*, on the margin of at-Tabari's *Tafsir*, III: 88; al-Jassas, *ahkam al-Qur'an* (Istanbul: Matba'at al-awqaf al-Islamiyya, 1335 [1916/17]), I: 471-3; al-Qurtubi, *ahkam al-Qur'an*, III: 363-5.

41 See al-Jassas, *ahkam al-Qur'an*, I: 472.

42 'A time will come when people will be taking usury ... and those who do not take it will be touched by its dust' (Ahmad ibn Hanbal, *musnad* II: 494; also Ibn Majah, *Sunan*, II: 765 [K. at-Tijarat, *bab at-taghliz fi l-riba*], and al-Nasa'i, *Sunan* (Cairo: al-Matba'a al-Maymaniyya, 1312 [1984]), II: 212 [K. al-Baya', *bab ijtinab ash-shubuhat fi l-kasb*], p. 355).

43 In the 1930's the percentages were in the order of 2% coins, 18% bank-notes and 80% bank deposits (see Jeffery Mark, *The Modern Idolatry* (London: Chatto and Windus, 1934), p. 55; *ibid.*, *Analysis of Usury* (London: J.M. Dent and Sons Ltd., 1935), p. 29). Now, with the advent of credit cards and other forms of 'electronic' money, the percentage of 'cash', i.e. coins and banknotes, in the economy is between 1 and 2 per cent, with this figure likely to decrease further (see A.G. Anderton, *Economics* [Ormskirk: Causeway, 1991], p. 355).

44 See F. Soddy, *Wealth, Virtual Wealth and Debt* (London: Allen and Unwin, 1926), p. 157; cited also in Mark, *The Modern Idolatry*, p. 85.

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- 45 See J.K. Galbraith, *Money: Whence It Came, Where It Went* (London: Pelican, 1976), p. 29.
- 46 Ezra Pound, *What is Money For?* (London: Greater Britain Publications, 1939), p.2 [=Pound, *Selected Prose: 1909-1965*, ed. William Cookson (London: Faber and Faber, 1973), p. 260]; cf. also Pound, *Impact* (Chicago: Henry Regnery Co., 1960), pp. 46-47, 101, 108, 187.
- 47 A.G. Anderton, *Economics: a new approach* (new edn., London: Unwin Hyman, 1990), p.18. For non-economic-textbook descriptions of the same process, see, for example: Mark, *The Modern Idolatry*, pp. 64-8, *ibid.*, *Analysis of Usury*, pp. 121-3; Soddy, *Wealth, Virtual Wealth and Debt*, pp. 153-4; *ibid.*, *The Arch-Enemy of Economic Freedom* (Knapp, Enstone, Oxon: 1943), pp. 2-7; C.H. Douglas, *The Monopoly of Credit* (4th edn, Sudbury: Bloomfield Books, 1979), pp. 19-21, 158-60; C.P. Jacob, *Economic Salvation* (London: Thornton Butterworth Ltd., 1933), pp. 123-4.
- 48 Anderton, *Economics: a New Approach*, p. 18.
- 49 Anderton, *Economics* (1991), p. 356.
- 50 Mark, *The Modern Idolatry*, p. 70.
- 51 See Mark, *The Modern Idolatry*, pp. 68, 2-3; *ibid.*, *Analysis of Usury*, p. 27.
- 52 Mark, *The Modern Idolatry*, p. 70.
- 53 'Undercurrents of 1994', BBC2 TV, 31 December 1994. Earlier in the same programme, the narrator had referred to 'the real places of power, the board-rooms of Britain and the trading-floors of international banks', which are 'home to the new masters of the universe, the bond and currency dealers, who make and break governments' economic policies and the careers of politicians with them.'
- 54 Eugene Linden, 'The Death of Birth', in *Time* magazine, 2nd January 1989, p. 22; see also 'Umar Vadillo, *The End of Economics* (Granada: Madinah Press, 1991), p. 26.
- 55 From a lecture entitled 'The BCCI and Modern Banking' delivered by Dr. Ahmad Shalabi at the 5th International Conference on Maliki fiqh held at the University of Granada, Spain, in August 1991.
- 56 Anderton, *Economics* (1991) pp. 359-60.
- 57 Financial Times, 23 January 1989, p. 16.
- 58 See P. and A. Ehrlich, *Extinction: The Causes and Consequences of the Disappearance of Species* (London: Victor Gollancz Ltd, 1982),

- p. 203.
- 59 See *Extinction*, p. 106.
- 60 *Extinction*, p. 204.
- 61 See Pound, *What Is Money For?*, p. 7 (= Pound, *Selected Prose*, p. 265).
- 62 This is the well-known quantity theory of money which states, in its simplest form, that, other things being equal, prices vary directly with the quantity of money in circulation (see Galbraith, *Money*, p. 21).
- 63 For these two, and other similar experiments, see J. Mark, *Where Is the Money to Come From?* (London: The C.W. Daniel Company Ltd, 1938), pp. 19-27.
- 64 See Pound, *What Is Money For?* p. 7 (= Pound, *Selected Prose*, p. 266); cf. *ibid.*, *Impact*, p. 99.
- 65 See al-Qurtubi, *Ahkam al-Qur'an*, V: 259.
- 66 See Hanna E. Kassis, 'Observations on the first three decades of the Almoravid dynasty', in *Der Islam* (Berlin/New York: Walter de Gruyter), LXII (1985), pp. 311ff.
- 67 See, for example, Ibn al-Athir, *al-Kamil fi t-tarikh* (Cairo, 1303 [1885/86]), IX: 216; also Kassis, 'Observations on ... the Almoravid dynasty', p. 317.
- 68 See also Meadows et al., 1992.
- 69 'Global 2000 Report to the President', 1980, taken from Clark, 1989: 10-11.
- 70 See 'State of the World' reports, published annually by the Worldwatch Institute, for a good overview of the latest developments.
- 71 Asad, 1987:133.
- 72 An alternative approach is to think in terms of frameworks or schemes rather than systems. See Brennan, 1990, for a helpful discussion.
- 73 Capra, 1982 : 27.
- 74 Scientific ecology and metaphysical ecology are distinguished by Brennan, 1990: Chapter 3, where the latter is referred to as a 'non-biological notion of ecology,' p.31. It is often referred to as deep ecology.
- 75 This is taken from National Research Council (U.S.) 1982.
- 76 Odum, 1983: 445.
- 77 This paragraph is based on NRC (U.S.), op.cit., p. 18.
- 78 This is a measure of the 'rate at which plants produce usable food or

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chemical energy through photosynthesis. It is obtained by subtracting the rate at which plants use energy to stay alive [rate of maintenance respiration] from the total rate at which they produce energy [gross primary productivity]' (Miller, 1985)

79 Op.cit., p. 488-489.

80 There is also the issue of the rights of other species to live and to have the environmental conditions to meet their needs and support their continued existence, quite apart from their uses to humans. Humans must of course develop a better understanding of their long-term needs and live in a more sustainable, ecologically sound manner. But if we are to regard other species as not simply instrumental to the satisfaction of human needs, then we must preserve wilderness areas for reasons other than the fact that we expect to receive certain direct benefits from them. I go on to show that Islam endorses such an attitude. See Birch (1982) and Cobb (1980) for good discussions of this and related points.

81 Odum, op.cit.

82 It could also offer other species the chance of sustainability.

83 A similar problem exists for calculating the amount of area to be preserved to support viable populations of non-human species, particularly large mammals.

84 Blackstone, 1974.

85 See Nasr (1990) and Sherrard (1987) for excellent elaborations of this latter point.

86 The first four points are taken from Blackstone, op.cit.

87 Qur'an 3:191; 38:27; 46:3.

88 Ibid., 13:3, 31:10; 36:36; 53:45.

89 Ibid., 7:56; 14:33; 15:19; 16:10-15; 54:49; 55:3-13; 67:3.

90 Ibid., 7:56.

91 Recent scientific ecology (see for example, Botkin (1990)) with the aid of the latest research technology and the support of complex statistical procedures has tended to portray nature as exhibiting both orderly and chance characteristics. But even when the chance element is stressed, it is pointed out that chance is not equivalent to chaos and that nature is still largely predictable.

92 Rahman (1980): 23-4.

93 Qur'an 3:190.

94 Ibid., 22:5.

95 See the writings of Ibn Arabi, especially *The Treatise on Being* for a Sufi perspective on the Unity of Being.

96 Asad (1987): 138.

97 Ibid., p. 140.

98 Qur'an 16:12; 45:12.

99 Ibid., 13:1; 16:10-17.

100 Fourth Caliph of Islam.

101 Quoted in Nasr (1980):16.

102 Qur'an 31:20; 22:65.

103 Asad (1984), note 46., p.377.

104 Ibid., 11:6; 25:48-9.

105 Ibid., 25:2; 87:1-3.

106 Ibid., 6:38.

107 Ibid., 13:15; 17:44; 22:18; 24:41.

108 Ibid., 17:44.

109 In the seminal 'A Sand County Almanac' written in 1949, Aldo Leopold made a plea for modern civilisations to embrace a land ethic which was based on a recognition that man, the soils, waters, plants and animals were members of a single ecological community. For Leopold it was '... inconceivable... that an ethical relation to land [could] exist without love, respect, and admiration for land, and a high regard for its [philosophical] value.' Quoted in Shepard and McKinley (1969):414.

110 Asad (1987):146.

111 Qur'an 30:72,3.

112 Asad, op.cit., p.146. In order to avoid giving a truncated version of Asad's conception of man, the following passage should also be quoted: 'The Qur'an makes it clear that our comprehension of reality can certainly be deepened and widened by what we describe as "mystical experience": in other words, through an intuitive, spiritual contact with the Divine and, hence, with those truths which are neither open to our self-perception nor can be fully grasped by analytical thinking.' Asad (1987), p.144.

113 See Masri, 1987.

114 Qur'an 7:31.

115 Ibid., 102:1-4.

116 Ibid., 9:60; 59:7.

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- 117 Sardar (1988).
- 118 Masri (1987).
- 119 Ba Kader *et al.* (1983).
- 120 I want to emphasise that I am not arguing that all Western thought and modern technologies are harmful and are to be shunned by Muslims. On the contrary, a great deal of both, used with discrimination, could help to improve the conditions of Muslim countries. Furthermore, many Western thinkers are extremely critical of what they see as dehumanising economic and social processes and technologies in their own societies and Muslims would benefit from studying the writings of these critics. Strategically, Islam might gain greater credibility if 'radical' Muslim government offered more constructive criticism of Western societies and adopted less of their highly dangerous technologies such as nuclear power and advanced weapons systems.
- 121 See Nasr (1990) and Sherrard (1987) for good critiques of Western science and its effects.
- 122 See, for example, Earthscan (1980).
- 123 Asad, (1980).
- 124 I am indebted to Sardar (1988) for these examples.
- 125 See Asad (1980) for an elaboration of these points.
- 126 Vargish (1980): 187.
- 127 '... [M]odern science [including scientific ecology], based as it is on a rationality subordinated to non-spiritual categories ... can never attain a knowledge of anything in itself, no matter how much it concerns itself with experiment and observation or how far it carries its functions of dissection and analysis. This is the situation to which modern science has been condemned and in which it continues to be trapped. It is compelled by its very premises to ignore [and one might add, deny] in things those qualities that transcend their finite appearance and the reason's capacity for logical analysis and reduction.' Sherrard (1987): 84.
- 128 A.M.A. Maktari, Water Rights and Irrigation Practices in Lahj, C.U.P., 1971, p.28.
- 129 A. Yusuf Ali, The Holy Qur'an: Translation and Commentary, note number 5149 to 54:28 and note 1044 to 7:73; and the commentary by Al-Jamal, Sulayman b. 'Umar, *Al-futihat al-ilahiyya*, on 54:28; and M.B. al-Sadr, *Iqtisaduna*, Beirut, 1981, pp. 519-23 and *passim*.
- 130 Maktari, *Ibid.*, p.21.

- 131 S.A. 'Ishar, 'Social life in the Islamic city', *'Ilam al-Fike*, vol.11, no.1, Kuwait, June 1980, pp.85-126.
- 132 N.M. Titley, *Plants and Gardens in Persian, Mughal and Turkish Art*, London, 1979.
- 133 Concerning the Islamic view of nature, see S.H. Nasr, *An Introduction to Islamic Cosmological Doctrines* (Albany, N.Y., 1993); *Science and Civilization in Islam*; and *Islamic Life and Thought* (Albany, H.Y., 1981), especially Chapter 19.
- 134 On the concept of Islam as the primordial religion, see F. Schuon, *Understanding Islam* and S.H. Nasr, *Ideals and Realities of Islam* (London, 1989). Islam is also called *din al-fitrah*, which means the religion that is in the very nature of things and engraved in man's primordial and eternal substance.
- 135 See our 'The Cosmos and the Natural Order,' in S.H. Nasr (ed.) *Islamic Spirituality - Foundations*, vol. 19 of *World Spirituality: An Encyclopedic History of the Religious Quest* (New York, 1987), p. 345 ff. See also S.H. Nasr, *Ideals and Realities of Islam*, p. 53 ff.
- 136 See Nasr, *An Introduction to Islamic Cosmological Doctrine*, p. 6ff. Also *Ideals and Realities of Islam*.
- 137 See W. Chittick, '"Allah Surrounds All Things": An Islamic Perspective on the Environment', *The World and I*, vol. I, no. 6 (June 1986), pp. 671-78.
- 138 It is of great significance that the Islamic paradise is not constructed of only precious stones from the mineral realm, but contains also plants and animals. Certain later Islamic philosophers such as Sadr al-Din Shirazi in his *al-Asfar al-arba'ah* and *Risalah fi'l-hasr* speak at length of the resurrection of animals and plants as well as of men.
- 139 On the Sufi attitude towards nature, see F. Meier, 'The Problems of Nature in the Esoteric Monism of Islam,' in *Spirit and Nature: Papers from the Eranos Yearbooks*, transl. R. Mannheim (Princeton, 1954), p. 203 ff; and Nasr, *Islamic Life and Thought*, Chap. 19.
- 140 On the Islamic concept of man, see G. Eaton, 'Man,' in *Islamic Spirituality - Foundations*, Chapter 19; also Nasr, *Knowledge and the Sacred*, pp. 358-77.
- 141 For a profound study of this loss of centre in Western man as a result of the advent of humanism, see Schuon, *Having a Center* (Bloomington, Ind., 1990), p. 160ff.
- 142 This categorisation is somewhat simplified for the sake of argument. There are, needless to say, shades of opinion and a certain amount

of diversity in each category, although the general characteristics of each voice as outlined below holds for members of the category in question.

- 143 Kasrawi, who died in 1946, held many views which are problematic from a traditional Islamic point of view, but he was perhaps the first Muslim writer to have thoroughly criticised European science and technology and their effect upon society.
- 144 We say 'for the most part' since most of the environmental problems of the Islamic world concern the health and physical well-being of its own citizens and do not affect the pollution of the global environment in the same way and to the same degree as do the actions of highly industrialised nations. There are, however, actions taken by certain Islamic, or for that matter so-called Third World countries, which do have dire consequences for the globe as a whole. These include the destruction of tropical forests and the use of pesticides which are of course the products of modern chemistry and part and parcel of modern agricultural practice. Strangely enough, because of such practices and their global consequences, for the first time since the beginning of the period of European expansion, the life of the industrialised West depends in a basic way upon the actions of those who live in what used to be European colonies.
- 145 We would be the last person to advise inaction by Muslims because of the technological and economic domination of the West. Even under the difficult conditions of today, much can be done by Muslims themselves. Moreover, some of the ecologically catastrophic actions taken in various Islamic countries, ranging from agricultural to architectural fiascos did not have to be carried out. Certainly the West cannot be blamed for all the wrong planning and action or for that matter inaction within Islamic countries, despite the West's grave responsibility as the main agent in the creation of the present global environmental crisis.
- 146 We have dealt extensively with this question in several of our writings, such as *Islamic Life and Thought* and *Science and Civilization in Islam*, and cannot deal with it at any length here.
- 147 See F. Schuon, *The Transcendent Unity of Religions*, especially chapters 2 and 3. See also S.H. Nasr, *Sacred Science and the Environmental Crisis*, Curzon Press, London 1993, Part Two,.
- 148 The part of them which is described as the breath of Allah, breathed into the first man at his creation.

